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MASSACHUSETTS PLAN FOR MANAGING HAZARDOUS MATERIALS FROM HOUSEHOLDS AND SMALL BUSINESSES

A DISCUSSION DOCUMENT

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AMHERST, MA

Written by:

Executive Office of Environmental Affairs
Department of Environmental Protection
Office of Technical Assistance

July 5, 1996

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TABLE OF CONTENTS

MASSACHUSETTS PLAN FOR MANAGING HAZARDOUS MATERIALS FROM HOUSEHOLDS AND SMALL BUSINESSES

A DISCUSSION DOCUMENT

JULY 10, 1996

Page

EXECUTIVE SUMMARY 1
PROGRAM SUMMARY 7
SECTION ONE: EOEA'S HHP MANAGEMENT STRATEGY 15
Early Program Development 15
1991 HHW Task Force 15
1994 Regional HHP Meetings 16
Funding for HHP: The Clean Environment Fund 17
EOEA's Basic Principles 17
Solid Waste Management Hierarchy 17
Closed Loop Management 18
Phased Approach to Managing Priority HHP 19
Three Priority Categories of HHP 19
Benefits of a Phased Collection Approach 21
The Challenge Ahead for Regional and Municipal HHP Managers 22

SECTION TWO: EOEA, DEP, AND OTA: CURRENT PROJECTS AND PROPOSED PLAN FOR FISCAL YEAR 1997 23
CATEGORY I: HIGH VOLUME PRIORITY MATERIALS 23
Paint and Related Products 23
Current Projects 23
Municipal Grant Program for Paint Storage Equipment 23
Contract for Collection and Training 24
Consumer Education 25
State Collection Contract 25
Recycled Paint Procurement Contract 25
Fiscal Year 1997 Core Projects 26
Continue Evaluation of Municipal Paint Recycling Program 26

SECTION TWO: HHP PLAN CONT. . . . . Page

Continue Municipal Paint Equipment Grant Program with Training and Brochures 26
Promote Municipal Paint Exchanges 26
Promote Statewide Collection Contract among State Agencies and Municipalities 26
Evaluate Statewide Collection Contract 26
Continue to Market Recycled Paint to State and Municipal Agencies 27
Potential New Initiatives 27
Establish Recycled Pain Purchases as a Priority for the Buy Recycled Business Alliance 27
Develop Brochure Cooperatively with Paint Manufacturers for Distribution to Paint Retailers 27
Identify Strategies for Improving Consumer Markets for Recycled Paint 27
Continue Dialogue with Paint Manufacturers to Clarify Barriers to Paint Recycling 27
Comprehensive Automotive Products Program 29
Current Projects 29
Promotion of Automotive Recycling Centers 29
Expand Scope of State Collection Contract 29
"Greenwrench" Model Program 29
Fiscal Year 1997 Core Projects 30
Continue to Promote Automotive Recycling Centers 30
Promote State Collection Contract 30
Evaluate State Collection Contract 30
Potential New Initiatives 30
Public Education and Outreach 30
Autobody Shop Compliance Simplification Project 30
Motor Oil 32
Current Projects 32
Used Oil Collection Tanks 32
State Collection Contract 32
Used Oil Policy Research 32
Development of Used Oil Legislative Proposal 33

SECTION TWO: HHP PLAN CONT. . . . . . **Page**

Used Oil Return Consumer Behavior Study 33
Re-refined Oil Procurement Contract 34
Used Oil Hotline 34
Fiscal Year 1997 Core Projects 34
Municipal Grants for Used Oil Collection Tanks 34
Promote Passage of Used Oil Legislation 35
Promote State Collection Contract 35
Promote Re-refined Oil Purchases 35
Potential New Initiatives 36
Pilot Program for Curbside Collection of Used Oil 36
Pilot Used Oil Collection Program at Public Docks and Private Marinas 36
Limited Public Education and Outreach Program 36
Evaluate the Burning of Used Oil in Space Heating 36
Assist Regional Pilot Efforts to Provide Oil Change Services to Municipalities 36
Oil Filters 38
Current Projects 38
State Collection Contract 38
Conduct Oil Filter Research 38
Establish Dialogue with Oil Filter Manufacturers and Recyclers 38
Fiscal Year 1997 Core Projects 38
Continue Dialogue with Oil Filter Manufacturers and Recyclers 38
Promote State Collection Contract 38
Potential New Initiatives 39
Develop Comprehensive Oil Filter Collection and Recycling Program 39
Procurement of Oil Filters Made With Recycled Steel 39
Antifreeze 41
Current Projects 41
State Collection Contract 41
Research Nature of Problem and Potential Management Solutions 41
Fiscal Year 1997 Core Projects 41
Promote State Collection Contract 41
Highlight and Expand on Existing Municipal and Regional Efforts 41

SECTION TWO: HHP PLAN CONT. . . . . . **Page**

Potential New Initiatives 42
Conduct Research on Antifreeze Recycling Systems 42
Procurement of Recycled Antifreeze 42
Gasoline 44
Current Projects 44
Barnstable County Pilot Project to Recycle Old Gasoline 44
Fiscal Year 1997 Core Projects 44
Barnstable County Project on Recycling Old Gasoline - Final Report 44
Potential New Initiatives 44
Statewide Implementation of Program 44
Automotive Batteries 45
Current Projects 45
State Collection Contract 45
Fiscal Year 1997 Core Projects 45
Promote State Collection Contract 45
Household Batteries 46
Current Projects 46
Household Battery Collection and Recycling Policy 46
Pilot Collection Programs 47
Household Battery Recycling Legislation 47
Obtain State Authorization for the Universal Waste Rule 48
Fiscal Year 1997 Core Projects 48
Expand Local Battery Recycling Programs 48
Develop Regulatory and Outreach Strategy to Implement New Battery Law 48
Continue Efforts to Obtain Authorization for Universal Waste Rule 49
Potential New Initiatives 49
Develop Educational Materials on Rechargeable Batteries 49
Research Feasibility of Collection Programs for all Rechargeables 49
Develop State Procurement Contract for Rechargeables 49
Develop Collection Program for State Agencies and Municipalities 49
Evaluate Alternative and Other Rechargeable Batteries and Battery Chargers 49
CATEGORY 2: UNIVERSAL WASTE RULE MATERIALS 51
Current Projects 51

SECTION TWO: HHP PLAN CONT. . . . . . **Page**

Consultant Research on Obtaining State Authorization 51
Internal Research 51
Regional Coordination Between States 52
Universal Waste Rule Pilot Projects 52
Fiscal Year 1997 Core Projects 52
Obtain State Authorization 52
Expand Collection Programs 52
Education and Outreach 52
Potential New Initiatives 53
New Pilot Collection Programs 53
Report of Managing Computers and other Electronics 53
Research on Low-Mercury Fluorescent Lamps 53
Educational Materials for Hospitals 53
CATEGORY 3: LOW VOLUME MATERIALS 53
Current Projects 53
HHP Management Prioritization Study 53
Fiscal Year 1997 Core Projects 54
Alternative Products Research 54
Potential New Initiatives 54
Develop HHP Manual 54
Model Collection RFP 55
EDUCATION, OUTREACH, AND TECHNICAL ASSISTANCE PROJECTS . . . 55
Current Projects 55
HHP Hotline 55
Public Education Materials 55
HHP Forum 56
Promote Regional Initiatives 56
Reduction of Chemical Hazards in Public Schools 56
Amendment to Massachusetts HHP Management Regulations 57
Fiscal Year 1997 Core Projects 57
Promote HHP Hotline 57
HHP Program Database 57
HHP Task Force 57
HHP Forum 58
Public Education Materials 58
Potential New Initiatives 58
Permanent HHP Programs and Facilities 58
POTW Information and Training 58
VSQG Database and Management Project 59
News Update for HHP Program Managers 59

Page

SECTION THREE: ROLES OF STATE GOVERNMENT AND OTHER PARTIES IN HHP MANAGEMENT 60

State Role (EOEA) 60
Other State Agencies 61
Local/Regional Role 61
Business/Industry 61
Environmental Advocacy 62

APPENDIX A: MAP OF COMMUNITIES THAT HAVE HELD HHW COLLECTIONS (1989 - 1996) A-1

APPENDIX B: LIST OF HHW COLLECTION EVENTS FOR 1996 . . . . . B-1

APPENDIX C: RECOMMENDATIONS ON HOUSEHOLD HAZARDOUS WASTE POLICY DIRECTIONS FOR MASSACHUSETTS (1991) C-1

APPENDIX D: EPA: THE UNIVERSAL WASTE RULE D-1

APPENDIX E: MAP AND LISTINGS OF COMMUNITIES WITH USED OIL AND SURPLUS PAINT COLLECTION PROGRAMS . E-1

APPENDIX F: PAINT WASTE REDUCTION AND MANAGEMENT FACT SHEETS F-1

APPENDIX G: PAINT AND RE-REFINED OIL PROCUREMENT CONTRACT MARKETING MATERIALS G-1

APPENDIX H: AUTOMOTIVE WASTE PREVENTION AND MANAGEMENT FACT SHEET H-1

APPENDIX I: ANTIFREEZE RECYCLING OPTIONS/ OIL FILTER RECYCLERS I-1

APPENDIX J: FILTER MANUFACTURERS COUNCIL USED OIL FILTER RECYCLING WORKSHOP J-1

APPENDIX K: STATE, REGIONAL, MUNICIPAL, AND PRIVATE HHP ACTIVITIES K-1

APPENDIX L: DEP BATTERY POLICY AND FACT SHEET L-1

APPENDIX M: RBRC: CHARGE UP TO RECYCLE--NICKEL-CADMIUM BATTERY RECYCLING M-1

Page

APPENDIX N: COMPARISON CHART OF FEDERAL BATTERY LAW AND EOEA LEGISLATIVE POSITION N-1

APPENDIX O: HOUSEHOLD BATTERY RECYCLING FACT SHEET O-1

APPENDIX P: PESTICIDE WASTE PREVENTION AND MANAGEMENT FACT SHEET P-1

APPENDIX Q: FLUORESCENT LAMP RECYCLING FACT SHEET Q-1

APPENDIX R: COMPUTER REUSE AND ELECTRONICS RECYCLING ORGANIZATIONS R-1

APPENDIX S: DRAFT SCOPE OF SERVICES FOR HHW MANAGEMENT PRIORITIZATION STUDY S-1

APPENDIX T: 1995 HHP FORUM PROGRAM AGENDA T-1

APPENDIX U: REGIONAL HOUSEHOLD HAZARDOUS PRODUCTS PLANNING DISTRICTS U-1

APPENDIX V: 1995 HIGHLIGHTS OF THE CHANGES IN HAZARDOUS WASTE REGULATIONS (310 CMR 30.000) V-1

APPENDIX W: TABLE OF MUNICIPAL HAZARDOUS HOUSEHOLD PRODUCTS PERMANENT RECYCLING PROGRAMS W-1

APPENDIX X: HAZARDOUS HOUSEHOLD PRODUCT COLLECTION DATABASE SURVEY AND DIFFICULT-TO-MANAGE WASTE SURVEY X-1

LIST OF TABLES/FIGURES

FIGURE 1. DIAGRAM OF MANAGEMENT STRATEGIES FOR PRIORITY MATERIALS 18

TABLE 1. SURPLUS PAINT PROGRAMS 28

TABLE 2. AUTOMOTIVE PRODUCTS PROGRAMS 31

TABLE 3. USED OIL PROGRAMS 37

TABLE 4. USED OIL FILTER PROGRAMS 40

TABLE 5. ANTIFREEZE PROGRAMS 43

TABLE 6. HOUSEHOLD BATTERY PROGRAMS 50

TABLE 7 . RELATED STATE AGENCY ACTIVITIES 63

TABLE 8 . REGIONAL AGENCY ACTIVITIES 64

TABLE 9 . MUNICIPAL AND PRIVATE ACTIVITIES 66

MASSACHUSETTS PLAN FOR MANAGING HAZARDOUS MATERIALS FROM HOUSEHOLDS AND SMALL BUSINESSES
A DISCUSSION DOCUMENT

Executive Office of Environmental Affairs
Department of Environmental Protection
Office of Technical Assistance

EXECUTIVE SUMMARY
July 1996

Overview

Nationwide, consumers are growing more aware of the environmental and health consequences of using and disposing of hazardous products that are routinely used in the home or by their own businesses. People now realize that responsibility for environmental protection rests not just with big business, but also with each of us in how we buy, use, and dispose of household products. This new sense of accountability has led consumers to buy "greener" products and seek safer disposal alternatives.

Government's environmental protection focus is likewise changing. With efforts to prevent and control industrial pollution paying off, better management of small business and household waste is coming to the fore as a public policy issue. Concerns about smokestacks and discharge pipes are giving way to worries about used motor oil being poured down storm drains, pesticides draining off suburban lawns, and mercury-containing batteries being thrown away instead of recycled. These household materials are exempt from state and federal hazardous waste regulations because enforcement on the household level is neither possible nor practical. Similarly, government is shifting its focus to helping small businesses manage their hazardous materials and comply with hazardous waste regulations.

A few years ago, Massachusetts was concerned mainly about waste *volume*; that is, reducing the amount generated and increasing the amount recycled. Today, the Executive Office of Environmental Affairs (EOEA) is also striving to reduce the *toxicity* of the waste stream by helping consumers and small businesses find safe recycling and disposal alternatives for hazardous products. This discussion document outlines the steps recently taken toward this end, goals and strategies for building on the progress made to date, and a vision for the future.

As discussed in the report, "Mercury in Massachusetts: An Evaluation of Sources, Emissions, Impacts, and Controls," written by the Department of Environmental Protection (DEP), municipal solid waste (MSW) contributes 56 percent of the mercury emitted from sources within Massachusetts. The U.S. Environmental Protection Agency estimates that 95 percent of the mercury in MSW comes from only four products: household batteries, fluorescent lighting, thermometers and thermostats. This document sets forth programs to control in-state mercury emissions from these and other items, in addition to over 70 other programs initiated or proposed to address other products of concern.

One thing you will notice about this document is that it uses a new term — "hazardous household products" (HHPs) — to describe the toxic items that have been commonly known as "household hazardous waste" up until now. This is deliberate. EOEA made a conscious decision to use the new term because:

- The most effective way to reduce the generation of hazardous waste in the home is to avoid buying hazardous products in the first place; and

- Even when purchased, these products become waste only when they are discarded — which is often not necessary, since most surplus products can be used by others and many used products can be recycled.

Numerous HHP-related activities have been initiated on the state and municipal levels over the last two years. This document catalogs these recent efforts and offers possible directions for new initiatives in the years ahead. In issuing this document, EOEA hopes to spark a healthy debate about protecting people and their environment from the impacts of HHP in the most cost-effective ways possible.

Current Practices

The simplest HHP management solution has been the grand sweep: accumulation and proper disposal of all unwanted materials through one-day collections. Nearly 15 years ago, the town of Lexington organized one of the first such events ever held. And today, one-day collections remain the most common solution of choice. Of the 351 towns and cities in Massachusetts, an estimated 260 have held at least one single-day household hazardous waste collection since 1989 to:

- Satisfy public demand for the collection of wastes perceived to be dangerous;

- Protect the environment, even if the benefits are not always quantifiable; and

- Educate residents — even those who do not need or take advantage of the collection — about potential risks from everyday products found in their basements, closets and garages, and under their sinks;

While these goals seem to have been met in municipalities holding regular collections, two persistent problems — high program costs and low participation rates — have prompted state and local officials to question whether collection events should continue or give way to new HHP management strategies.

One-day collections remain particularly expensive because program managers often elect to collect and dispose of all products people *perceive* to be hazardous, without regard to the risks posed by individual items, the benefits gained by disposing of them as hazardous wastes, or reuse and recycling options.

Also, some HHPs currently being collected have such minimal environmental and public health impacts that it is safe to dispose of them in properly-run combustion facilities, landfills, or wastewater treatment plants. At the same time, many other problematic materials are not being effectively collected despite the availability of viable reuse and recycling options, and instead are being thrown in the garbage, poured down the drain, or dumped outside.

The bottom line is that high costs coupled with low HHP capture rates make one-day collections inadequate as a primary strategy. Today, perhaps more than ever, government must strive to be budget-conscious and efficient. Municipal officials find they cannot justify continuing one-day programs, or even making investments in large regional facilities, when they are being forced to cut spending on essential services such as education and public safety. Similarly, state government is being consolidated and made more efficient. Public officials need to prioritize spending and look for more cost-efficient ways to protect the environment.

A Plan for the Future

In the years ahead, state and municipal officials must strive to identify which HHPs can be readily reused and recycled or safely disposed as solid waste. Then they can more cost-effectively target the remaining materials of greatest concern for disposal as hazardous wastes. EOEA proposes the following framework for these efforts:

Overall Goals

- Protect human health and the environment by reducing the toxicity of the waste stream.
- Conserve valuable resources in leftover HHPs.

Primary Strategies

- Increase the **collection of priority materials**.
- Develop **cost-effective and environmentally protective** programs.
- **Establish targeted education programs** as opposed to a "one size fits all" approach.
- Ensure **phased** statewide development of **comprehensive** HHP management programs consistent with EOEA's Watershed Initiative.
- Link environmental protection with **job creation and economic development** through greater recycling of priority materials.

Basic Principles

- **Emphasize Reduction, Reuse, and Recycling:** Pollution prevention is the most environmentally protective and least costly alternative. Wastes not generated in the first place don't need to be managed.

- **Promote Markets for Recycling:** Only when used materials are collected, processed, remanufactured, and purchased as recycled products does true "recycling" occur. Creating new markets for post-consumer HHPs will eventually lower the cost of collecting them.

- **Prioritize HHP Management:** Instead of budgeting annually for costly one-day collections that reach small numbers of people and fail to target the products of greatest risk, state and local governments should emphasize permanent local and semi-regional collection centers that accept priority HHPs.

There are three priority categories of HHPs to be addressed under this plan:

- **CATEGORY I - HIGH-VOLUME PRIORITY MATERIALS:** These items — including surplus paint, used oil, oil filters, antifreeze, old gasoline, automotive batteries, and both button cell and nickel-cadmium batteries — are generated in large volumes and, if managed improperly, can pose serious threats to the environment. Fortunately, there are ample reuse and recycling options for all of these materials that are readily available on the local level in Massachusetts. For example, EOEA recommends that municipalities create permanent "automotive materials recycling centers," which can later be expanded to accept other priority HHPs, including materials from Categories II and III. Many of these programs are now being implemented.

- **CATEGORY II - UNIVERSAL WASTE RULE MATERIALS:** The U.S. Environmental Protection Agency, in its Universal Waste Rule (URule) of May 1995, deregulated materials previously regarded as hazardous waste so better environmental protection could be achieved at lower cost. These materials include certain batteries, thermostats, and pesticides. Massachusetts is seeking federal authorization to administer the program and will consider expanding it to include other materials such as fluorescent lamps, thermometers, mercury switches, and computer terminals. Pilot collection and recycling programs are currently underway to improve management of these materials on a permanent local and semi-regional basis.

- **CATEGORY III - LOW VOLUME MATERIALS:** These materials — including solvent-based glue, metal cleaners, toxic art supplies, old chemistry sets, and photographic chemicals — tend to be generated in small quantities, but their disposal poses environmental and health risks. Unfortunately, many one-day collections also accept non-toxic aerosols, cleaners, and glues that could have been recycled, thrown in the garbage, or safely poured down the drain. Programs to address these materials, with an emphasis on permanent semi-regional solutions, are still being studied.

To reduce the need for special collection and disposal of HHPs, EOEA and the DEP are conducting additional research to determine which can be effectively reused or recycled, which can be safely disposed of in lined landfills, combustion facilities, or wastewater treatment plants, and which are truly hazardous. Because of the improved technology of many waste disposal facilities, some HHPs may no longer need to be disposed of as hazardous waste.

A Phased Approach

While some municipalities already collect a range of materials on a permanent basis, others are starting from a more basic level. A phased approach offers guidance to municipalities on what to collect, while allowing them to proceed at their own pace depending on local budget conditions and experience. Ultimately, everyone will win. Spurred by the convenience, consumers will bring in more HHPs for reuse, recycling, and proper disposal — thus reducing environmental and public health risks while increasing the cost-effectiveness of the municipal program.

EOEA proposes two options for how municipalities should phase in the permanent collection of priority HHPs. Option 1 is to develop local, permanent collection of high volume priority materials and some "universal" priority materials, phasing in the collection of these materials over time. Once high volume and universal materials are being collected at permanent sites, one-day collections of these items may no longer be necessary. Permanent local collection allows for increased participation and material consolidation, which creates an economy of scale to reduce transportation costs. Attleboro and Amherst together saved more than $15,000 last year alone by applying this approach to paint collection. Additional priority materials, including those generated in small volumes, would then be collected through either permanent semi-regional collection centers or one-day collections.

Option 2 is to collect all priority materials on a permanent basis locally. Somerville, Sturbridge, and Martha's Vineyard have opted for this approach, setting up permanent collection centers to accept all HHPs. This approach has worked well for these communities, with participation growing over time. EOEA is also studying whether small, semi-regional permanent collection centers have a role for groups of small towns that can achieve economies of scale through cooperative solutions. In addition, EOEA will conduct research on areas with large, permanent regional facilities, although preliminary research indicates that capital and operating costs are high, and siting may be a barrier.

The Challenge Ahead

What each community must do now, based on its unique circumstances, is determine which materials are most necessary to collect. For example, communities served by combustion facilities may want to focus on "button" and rechargeable batteries that contain mercury and cadmium. Communities on the coast or near sensitive water bodies might instead emphasize the collection of used oil. And those depending on landfills, whether lined or not, may want to collect liquid toxics that become leachate. Other municipalities will have their own justification for prioritizing materials for collection.

Each municipality is free to develop its own coordinated HHP strategy in recognition of budget constraints, natural features, and the unique challenges of managing various discarded materials. Within a period of three to five years, however, most of the 351 towns and cities in Massachusetts should have comprehensive programs in place for managing the HHPs generated by their residents.

A Final Word

This document is presented for your review and comment. You and your colleagues — including municipal recycling coordinators, HHP program managers, business representatives, and other concerned officials and citizens — know best if the future direction being proposed here is the right one. You also have the experience and insight to suggest how it should be modified or changed to accommodate your specific local or regional conditions. This document also describes the numerous HHP-related activities that have been initiated over the past two years. EOEA is counting on you to correct, update and revise any information relevant to your programs.

Above all, it is hoped that this document will spark discussion about the most cost-effective ways to protect the environment from the impacts of HHP. EOEA developed this document based, in part, on meetings held throughout the state in 1994 with HHP program managers, as well as through numerous discussions with local and regional leaders in the field. In coming months, EOEA will hold meetings across the state to gather your feedback. You are also welcome to write, fax, or call with your comments.

The opinions you share are important, because the final document will be not only a two-year action plan for Massachusetts, but an informational resource for towns and cities, regional planning agencies, businesses, and consumers as we all work together to lower the cost and improve the effectiveness of HHP management programs in the future.

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SUMMARY OF CURRENT PROJECTS AND PROPOSED PLAN FOR FISCAL YEAR 1997

HIGH VOLUME PRIORITY MATERIALS

PAINT

Problem: Paint is the highest volume material at household hazardous waste collections. Although oil-based paints and solvent-based paint products contain toxic components, both latex and oil-based paints can be recycled into new paint.

Current Projects

- Awarded 58 paint collection center grants serving 67 municipalities; allows for the permanent collection of paint and related products (e.g., solvents).
- Training municipal staff to sort paint for reuse, recycling, and disposal.
- Developed statewide paint collection contract to lower recycling/disposal costs.
    - City of Attleboro saves $2.46 for every gallon of paint it collects at its permanent collection center as compared to one-day collections, for an annual savings of $11,000.
    - Amherst saves $3.71 per gallon of paint through permanent collection, for an annual savings of over $4,000.
- Provide municipalities receiving paint equipment grants with customized brochures announcing program.
- Developed and are distributing consumer fact sheets on proper paint management.
- Promoting purchase of recycled paint by state agencies and municipalities.
    - Increased recycled paint purchases from $2,500 in July, 1995, to over $20,000 by July, 1996.
    - Added recycled paint vendors to state purchasing contract with wider range of colors; two Massachusetts businesses on state contract: Green Paint (Whitinsville) and Durant Paint (Revere).
    - Developed marketing materials and held Buy Recycled Workshops.

Planned Fiscal Year 1997 Projects

- Award an additional 25 municipal paint collection center grants.
- Double recycled paint purchases by state and municipal agencies to $40,000.
- Promote municipal paint exchanges.
- Begin marketing recycled paint to the Buy Recycled Business Alliance.
- Develop and distribute brochure on proper paint management, in cooperation with paint manufacturers and retailers.

MOTOR OIL

Problem: Used oil is the second highest volume material brought to household hazardous waste collections. People who change their own oil generate nearly 3 million gallons of used oil per year, of which only 15-20 percent is returned for recycling. Used oil is a listed hazardous waste in Massachusetts because it contains many hazardous materials from use in vehicle engines.

Current Projects

- Provided 56 municipal grants for used oil storage tanks, increasing the number of permanent municipal used oil collection centers to 131.
- Developing statewide used oil collection contract to lower recycling costs for state agencies and municipalities.
- Commissioned report entitled, "Massachusetts Used Motor Oil and Oil Filter Policy Review," which provides recommendations for policy and legislative changes to improve used oil collection and recycling.
- Promoting purchase of re-refined oil by state agencies and municipalities.
    - Developed statewide purchasing contract (signed with Dennis K. Burke, Inc., of Chelsea, MA) to build markets for used oil collected.
    - Developed marketing materials and held Buy Recycled workshops.
- Staff a used oil hotline (617-556-1022) to answer questions and distribute information.
- Conducting public opinion research to determine how best to increase used oil recycling among "do-it-yourself" oil changers.

Planned Fiscal Year 1997 Projects

- Award an additional 25 municipal grants for permanent used oil recycling centers.
- Triple the amount of re-refined oil purchased by state and municipal agencies, from $3,100 to $10,000.
- Develop a pilot program for the curbside collection of used oil.
- Develop a pilot program for the collection of used oil at public docks and private marinas.
- Evaluate the existing used oil management proposal (developed by consensus) and available legislative options for improving the current Used Oil Return Law.

OIL FILTERS

Problem: Used oil filters generated each year in Massachusetts contain between 262,500 and 787,500 gallons of used oil, as well as 3,570 tons of steel.

Current Projects

- Increased the number of municipalities collecting used oil filters by making oil filter collection a condition of receiving a used oil storage tank grant in 56 municipalities.
- Developing policy options that will increase the amount of oil filters (and oil contained in the filters) being recycled.
- Developing a statewide oil filter collection contract to lower recycling costs for state agencies and municipalities.

Planned Fiscal Year 1997 Projects

- Promote commercial recycling of oil filters.
- Promote oil filter recycling in cooperation with filter manufacturers and processors, including participating in a workshop scheduled for October, 1996.
- Establish increased private and municipal collection centers for "do-it-yourselfers."

ANTIFREEZE

Problem: As with used oil, antifreeze is generated in high volumes and contains contaminants picked up during engine use. Antifreeze is toxic, but can be safely recycled into new antifreeze.

Current Projects

- Developing a statewide antifreeze collection contract to lower recycling costs for state agencies and municipalities.

- Encourage municipal collection of used antifreeze by making its collection an optional condition of used oil storage tank grants to 56 municipalities.

Planned Fiscal Year 1997 Projects

- Conduct research on the costs and benefits of on-site antifreeze recycling systems.

- Highlight and expand on successful regional antifreeze recycling programs (e.g., Barnstable County).

- Develop education and outreach materials for municipal, regional, and state agencies to encourage collection and recycling of used antifreeze.

GASOLINE

Problem: Gasoline is toxic and hazardous because of its ignitability. Old gasoline is typically generated from boats, lawnmowers, and other household power equipment. Uncontaminated old gasoline can be reconditioned and used again as gasoline.

Current Projects

- Funding Barnstable County pilot project to collect old gasoline at marinas and gas stations, test and recondition the gasoline, and use the gasoline in municipal power equipment in five municipalities.

Planned Fiscal Year 1997 Projects

- Develop a plan for recycling old gasoline on a statewide basis, based on a report to be submitted as part of the Barnstable County project.

- Add gasoline to statewide collection contract to increase reconditioning and safe handling of old gasoline by state and municipal agencies.

AUTOMOTIVE BATTERIES

Problem: Automotive batteries are toxic because they contain high levels of lead. However, lead has a market value and can be easily captured from batteries and recycled. Therefore, automotive batteries are worth about $1.75 per battery for their scrap value.

Current Projects

- Encourage municipal collection of used automotive batteries as a condition of used oil storage tank grants to 56 municipalities.

- Developing a statewide collection contract for automotive batteries to lower recycling costs for state agencies and municipalities.

Planned Fiscal Year 1997 Projects

- Develop outreach program for state agencies and municipalities to increase collection and recycling of used automotive batteries.

HOUSEHOLD BATTERIES

Problem: Household batteries are generated in large quantities. Several types of batteries, such as button cell batteries and nickel-cadmium (NiCad) batteries, contain toxic chemicals that are dangerous when improperly disposed. However, these batteries can be safely collected for recycling.

Current Projects

- Issued policy that encouraged battery recycling by easing regulatory requirements, lowering collection costs for businesses and municipalities.

- Promoting industry-sponsored program for recycling rechargeable batteries at retail and municipal locations (1-800-8-BATTERY). Over 200 participating retail stores in the state.

- Developed pilot programs for the recycling of button cell and nickel-cadmium batteries in Barnstable County and on the North Shore.

- Over 40 municipalities are now collecting button cells at a permanent local location; over 30 are collecting NiCads locally.

- Developed legislative position on comprehensive household battery recycling and toxics reduction.

Planned Fiscal Year 1997 Projects

- Double the number of municipalities collecting button and NiCad batteries at permanent local locations.

- Develop regulatory and outreach strategy to implement 1996 federal battery law.

- Develop pilot collection program to evaluate various collection methods, including curbside, retail collection, and mail-back programs.

"UNIVERSAL WASTE" MATERIALS

Problem: EPA promulgated the final version of its Universal Waste Rule in April 1995. This rule is designed to reduce the regulatory burden of managing "universally" used consumer products that may be classified as hazardous waste when disposed. The current rule includes most button cell and NiCad batteries, mercury thermostats, and recalled or hazardous waste pesticides. States that obtain authorization from EPA can add additional materials to this list, such as fluorescent lamps, thermometers, computers/electronics, and electrical switches.

Current Projects

- In process of obtaining state authorization for the Universal Waste rule; holding two focus groups (July 10 and 11) to obtain feedback from key stakeholders.

- Working with other Northeast states to ensure regional adoption of Universal Waste Rule.

- Initiated pilot project in 5 Barnstable County municipalities for fluorescent lamp and battery recycling.

Planned Fiscal Year 1997 Projects

- Develop outreach program to inform businesses, municipalities, and the public about collection opportunities for Universal Wastes.

- Develop pilot collection programs for other potential Universal Wastes, such as thermometers, mercury switches, computers, and electronic equipment.

LOW VOLUME MATERIALS

Problem: Many toxic materials are produced in low volumes by households, yet still require a management solution because of their toxicity. These materials are now currently handled through one-day collections, when available, although this approach has proved insufficient.

Current Projects

- Conducting study that will identify the environmental risks of disposing of particular products and determine specific management solutions for each product.

Planned Fiscal Year 1997 Projects

- Develop manual for state and regional managers specifying proper advice for citizens on managing each hazardous household product.

- Develop consumer shopping guide on non-toxic alternatives to hazardous household products.

- Develop a model request for proposals for one-day collection events to reduce municipal costs.

EDUCATION, OUTREACH, AND TECHNICAL ASSISTANCE PROJECTS

Current Projects

- Staff a hotline (800-343-3420) to answer citizen questions on the management of hazardous household products.

- Developed fact sheets on the proper management of paint products, fluorescent lamps, batteries, automotive products, and pesticides.

- Held annual forum for municipal, state, and regional program managers to promote information exchange.

- Funded short-term regional coordinator positions in Barnstable County, the Northeast Solid Waste Committee, Essex County, and the South Shore to promote regional solutions and lower municipal collection costs.

- Amended state regulations to encourage private sector collection efforts, as well as ease the burdens of establishing permanent centers.

Planned Fiscal Year 1997 Projects

- Establish a Hazardous Household Products Task Force.

- Evaluate the cost-effectiveness of various existing permanent collection programs and facilities.

- Establish a database of municipal programs that permanently collect priority materials, and revise database of municipalities holding one-day collection events.

- Research the collection needs of very small quantity generators and develop an options analysis.

- Design pilot collection programs for very small quantity generators for implementation in fiscal year 1998.

- Produce education materials on hazardous household products for pre-treatment program staff of publicly owned treatment works.

SECTION ONE

EOEA'S HHP MANAGEMENT STRATEGY

Early Program Development

Almost 15 years ago, one of the first HHW collections was held in Lexington, Massachusetts. During the mid-1980's, EOEA's Office of Safe Waste Management (now Office of Technical Assistance, OTA) encouraged these collections by offering matching grants to community HHW collection programs. Funding for this activity ended in 1988. Currently, collection services are available only in those communities that can afford them. While a number of communities have not held a collection program since 1988, many find that their residents come to expect this service and continue to hold periodic collections. Of the Commonwealth's 351 cities and towns, an estimated 260 have now held at least one HHW collection event within the past seven years. In 1996, 86 communities have either already held collection events or have events planned. (See Appendix A for map showing those communities that have held a collection event over the past seven years and Appendix B for a list of HHW collection events held or planned for 1996.)

However, despite this tradition of one-day collections, state planning has only recently targeted HHW as a priority. Three years ago, the Commonwealth was focused almost entirely on reducing and recycling the *volume* of solid waste it generated. Today, that focus has been expanded by EOEA to include a reduction of the toxicity of the solid waste stream as well. Although representing just 0.1 percent of municipal solid waste (MSW), toxic products have been a cause of concern. For example, mercury emissions from municipal solid waste combustion facilities are believed to be a significant source of the high levels of mercury detected in some freshwater fish. Batteries, fluorescent lamps, thermometers, thermostats, switches, and other products all contain mercury. Toxic products disposed of in landfills, septic systems, and sewer systems also pose risks to water supplies.

Over the past two years, EOEA has placed greater emphasis on the management of hazardous materials from households and small businesses. Toxicity reduction has become well-integrated into the waste management responsibilities of agency staff, whether it be in providing equipment grants to divert HHP from the municipal waste stream, developing regulations for the collection of particular waste streams, or marketing recycled products to state agencies.

EOEA's strategy for managing HHP has been informed by the recommendations of an HHW task force set up in 1991 by past-Commissioner of the Department of Environmental Protection (DEP), Dan Greenbaum; by statewide planning conducted in 1992 by former Director of Waste Policy, and current Undersecretary of EOEA, Leo Roy; and by regional meetings held around the state by EOEA and DEP in 1994.

1991 HHW Task Force: The 1991 task force recommendations (see Appendix C) raised the notion of prioritizing HHP for management. Since data supporting a direct causal relationship

between HHW and environmental and human health impacts was not conclusive, this task force proposed that an assessment of relative risks of various HHW be conducted. The task force also recommended that the state's policy on HHP management should incorporate the *hierarchy of waste management*:

(1) reduce toxics use, through product reformulation and consumer education;
(2) use up the product or donate it to someone who can use it;
(3) recycle or re-refine the product;
(4) dispose of the product through solid waste combustion, solid waste landfilling, or a public sewer system (if that product can be safely disposed); or
(5) collect and dispose of HHW through a special collection as a last resort.

The fourth point in the hierarchy above is, perhaps, the most significant since, for the first time, the state suggested that it might be better to dispose of certain materials considered HHW in the garbage or down the drain (if considered safe) rather than collecting them for subsequent hazardous waste disposal. While the task force ranked certain products, however, it did not provide recommendations as to which wastes should be disposed under which scenarios, and which should be held for a special hazardous waste collection.

The task force had also recommended that used oil from do-it-yourselfers be collected in a centralized accessible location in every community. In addition, the committee recommended innovative funding strategies for collections. For example, it suggested finding corporate sponsors and using a regional wastewater treatment plant or water district as a host or co-sponsor, and it stressed that consumer education that causes changes in behavior is the most cost-effective approach to reducing HHW generation.

1994 Regional HHP Meetings: In 1993, the Secretary of Environmental Affairs, Trudy Coxe, designated planning for hazardous materials from households and small businesses as one of her priorities. EOEA, in collaboration with DEP and the Office of Technical Assistance (OTA), began to address this challenge by holding six regional meetings throughout the state with municipal and regional HHP planners.

These meetings were convened by the Tri-Town Health Department in Lee, the Pioneer Valley Planning Commission, the Franklin County Solid Waste District, the Fitchburg-based Fundamental Action to Conserve Energy, the City of Boston Environment Department, and the North East Solid Waste Committee. Ideas were also exchanged with DEP's Hazardous Waste Advisory Committee, and comments were solicited from the Cape Cod Commission, Martha's Vineyard Refuse District, and the Metropolitan Area Planning Council. In addition, EOEA and DEP met with representatives of a Massachusetts-based paint recycling company, an oil retailer, and the SEMASS resource recovery facility.

The main lesson learned from these meetings was that communities were spending much of their resources on two materials -- surplus paint and used oil -- because these materials show up in the greatest volumes at one-day HHW collection events. These meetings also discussed the costs and benefits of collections and raised the concept of prioritizing materials for collection.

These meetings also created the opportunity for state officials to discuss the different needs of regional and local groups, and how the state could assist in these efforts. While some regions of the state were clearly advanced in their management of HHP, others, notably in parts of western Massachusetts, had few, if any, collections since state grants stopped in 1988.

Funding for HHP: The Clean Environment Fund: In 1994, EOEA successfully orchestrated a coalition of business, environmental, and local/regional government agencies in support of a legislative appropriation from the Clean Environment Fund (CEF), financed by unclaimed bottle deposits. For fiscal year (FY) 1995, the Legislature appropriated $5 million, which EOEA and DEP allocated to ten recycling programs, representing over 50 projects. EOEA designated one of those programs for HHP and, consistent with the intent of the CEF, contributed close to $300,000 for the reuse and recycling of surplus paint and used oil, and hired an HHP program coordinator. For the first time in a decade, funds were available to build a viable HHP management program. In FY 1996, however, the legislative appropriation was reduced to $4.2 million, resulting in a decreased allocation for HHP-related programs to $200,000. With the FY 1997 appropriation again likely to be $4.2 million, EOEA is in the midst of developing its spending plan. If HHP programs are important to your municipality or region, EOEA needs to hear from you.

EOEA's Basic Principles

There are three basic principles that guide EOEA in its HHP planning: (1) the solid waste management hierarchy; (2) "closed loop management" of each particular HHP; and (3) a phased approach to the permanent collection of priority materials.

Solid Waste Management Hierarchy -- Emphasize Reduction, Reuse, and Recycling: Consistent with the 1991 recommendations of DEP's HHW task force, EOEA incorporates the waste management hierarchy as its underlying principle for HHP management. In the hierarchy, pollution prevention is the most desirable alternative, followed by reduction, reuse, recycling, and then disposal as the least desirable alternative. These alternatives are illustrated in Figure 1 on the following page. Box #1 represents pollution prevention and source reduction of HHPs. Following use, surplus products can be reused as indicated in box #2. Box #3 represents recycling collection of surplus products or by-products that are not of sufficient quality to be reused. In box #4, collection materials are reprocessed or remanufactured into new products and then used again. Finally, materials that can no longer be reused or recycled are safely disposed of.

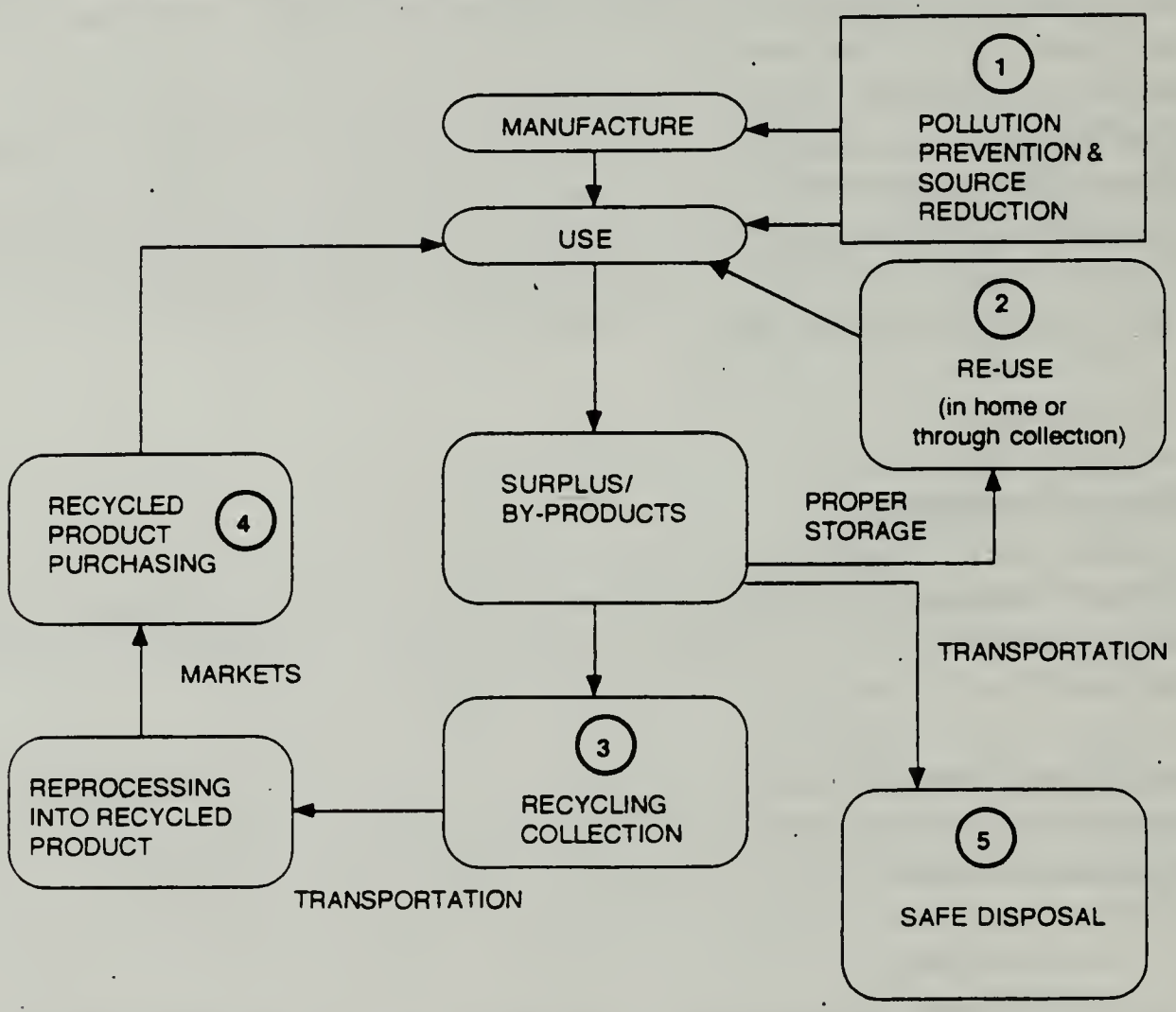
While initial programs to collect and dispose of HHW at one-day collections focused on "end of the pipe" disposal solutions, current programs around the country have shifted toward reduction, reuse, and recycling. Pollution prevention, which is at the top of the hierarchy, is EOEA's primary goal because it is the most environmentally protective, least cost alternative. Materials that are not generated in the first place don't need to be managed. EOEA's Office of Technical Assistance (OTA) provides toxics use reduction guidance to

companies and institutions. OTA has expanded these efforts to households and emphasizes choosing less toxic and non-toxic products.

Figure 1 below illustrates how a closed loop management approach can be integrated into the waste management hierarchy.

Figure 1

MASSACHUSETTS PLAN FOR MANAGEMENT OF HAZARDOUS MATERIALS FROM HOUSEHOLDS AND SMALL BUSINESSES
Diagram of Management Strategies for Priority Materials



Closed Loop Management -- Promote Markets for Recycling: EOEA and DEP have borrowed the second basic principle from the recycling field -- "closing the loop" on each material managed. EOEA's Ten Point Recycling Plan allocates CEF funds in four basic areas -- collection, processing, remanufacturing, and the procurement of recycled products. Only when a post-consumer material follows this four-part path does true "recycling" occur.

Closed loop management, as shown above in Figure 1, also applies to HHP. For example, EOEA and DEP provide equipment grants for the ***collection*** of surplus paint and used oil (box #3.) Recycling loans are available to all recycling companies for the ***processing*** and ***remanufacturing*** of materials, such as paint and oil. To complete the loop, EOEA and the Department of Procurement and General Services (DPGS) actively market the ***procurement*** of recycled paint and re-refined oil by state agencies and municipalities (box #4). Through its procurement policy, DPGS has successfully doubled the state's purchase of

all recycled products from $8 million to $16 million between FY 1994 and FY 1995, and again increased state purchases of recycled products to nearly $23 million in FY 1996. In addition, recycled paint and re-refined oil are marketed to businesses by the CEF-funded Massachusetts Buy-Recycled Business Alliance. While EOEA's efforts have focused on closing the loop on these two high priority materials, it hopes to extend this concept to other materials as the program develops.

"Closing the loop" on recycling assists in balancing supply and demand of materials, which is important in creating stable markets for the collected materials. In the late 1980s, when recycling began in earnest, only 5-10 percent of the wastestream was recycled statewide. Initially, DEP focused on improving collection of the materials. Once collection programs had become established, a market development specialist was hired at DEP to promote the demand for recyclables. The new emphasis on building markets for recycled products resulted in the issuance of Executive Order 279 in 1988, which encouraged the procurement of recycled products by state agencies. Then, in 1994, Executive Order 350 was issued to improve the overall environmental performance of state agencies. Within the past two years, markets for the collected materials have begun to develop, due to a combination of natural supply and demand forces and the efforts of EOEA and DEP to provide assistance in all four management areas. Creating markets for collected materials eventually lowers the cost of collections, further encouraging greater materials collection and setting the recycling loop in motion.

Phased Approach to Managing Priority HHP: While the two previous principles probably sound familiar, the third principle of prioritizing HHP for collection proposes a radical departure from most current HHP programs in Massachusetts and around the nation, which have not yet begun to prioritize the materials they collect on a permanent basis. Current programs budget annually for one-day collection events that reach a small number of people, cost a great deal of money, and fail to target the highest priority materials.

EOEA encourages an alternative approach that emphasizes the collection of priority HHP at permanent local, semi-regional, and private collection centers. Such an approach can avoid the excessive costs and burdens of current one-day collection programs or large regional facilities, and instead can help mold programs to cost-effectively target the products of greatest environmental concern. Priority materials are those that are either: (a) highly toxic, flammable, corrosive, or reactive (e.g., toxic glue and photographic chemicals); (b) are generated in high volume (e.g., surplus paint and used oil); or (c) those for which favorable markets exist for reuse or recycling (e.g., surplus paint, used oil, and car batteries).

Three Priority Categories OF HHP: EOEA divides HHP into three priority categories. While each category represents a similar level of priority, the Commonwealth has developed projects to manage the products within each category at a different pace. For example, projects to address Category I materials have, for the most part, been fully developed and are now being implemented in numerous municipalities. By contrast, projects to address Category II materials are only in the pilot phase, with selected regions serving as models. Category III represents projects that are still in the conceptual stage.

EOEA envisions that projects will proceed simultaneously to address materials in each category, with the goal over three to five years being comprehensive HHP programs in each municipality. The key to developing these comprehensive programs is a recognition that each particular HHP has a corresponding preferred management solution which will depend on the type, quantity, and condition of the material, as well as the location of the resident or business generating that material and the disposal facility in which it would normally be disposed.

CATEGORY I - HIGH VOLUME PRIORITY MATERIALS: These materials appear at the top of any HHP program list: surplus paint, used oil, oil filters, antifreeze, old gasoline, car batteries, and household batteries (button cell and nickel-cadmium (NiCad) rechargeable). Almost all of these materials have reuse and recycling options that are readily available to every municipality in the Commonwealth. They show up in large volumes in the solid waste stream and, if managed improperly, are a clear threat to the environment.

In 1991, the Massachusetts Water Resources Authority (MWRA) sponsored pilot HHW collection programs for 11 Boston area communities to determine the volume and types of waste collected. By weight, paint was the largest percentage of material collected (52 percent), with motor oil next (28 percent), and the remainder being aerosols, antifreeze, pesticides, gases, organics, acids, oxidizers and other materials (20 percent). EOEA's strategy is for Category I materials to be the foundation of locally-based HHP programs, with oil, oil filters, antifreeze, gasoline, and car batteries comprising "automotive recycling centers," onto which can be added other priority HHP, including materials from Categories II and III.

CATEGORY II - UNIVERSAL WASTE RULE MATERIALS: These materials are closely associated with EPA's Universal Waste Rule (URule), which was published in the May 11, 1995 *Federal Register* and is found in the *Code of Federal Regulations* at 40 CFR, Part 273. This rule, discussed in more detail in Section Two, streamlines regulatory requirements for certain widely generated hazardous wastes to encourage increased recycling of these materials. Currently, the URule eases the collection of hazardous batteries (button cells and NiCads), recalled or hazardous waste pesticides, and thermostats that are "universally" generated from all sources, including households, Very Small Quantity Generators (VSQGs), Small Quantity Generators (SQGs), and Large Quantity Generators (LQGs). EOEA and DEP are evaluating the options for obtaining regulatory authority to manage these and other similar products, such as fluorescent lamps, thermometers, mercury switches, cathode ray tubes, and circuit boards. Pilot projects are in place to collect and recycle several of these materials. Although button and NiCad batteries are included in EPA's URule, the state had previously eased the regulation of this material. For this reason, batteries are listed with other materials in Category I for which viable management solutions exist. (See Appendix D for a copy of EPA's URule brochure.)

CATEGORY III - LOW VOLUME MATERIALS: These are materials that are disposed of in small quantities, but create an environmental or health risk in their disposal. These materials might include solvent-based glue, metal cleaners, toxic art supplies, old chemistry sets, and photographic materials. It is this category which is less defined and in need of greater clarity. Many one-day HHW programs currently collect materials for disposal such as non-toxic aerosols, cleaners, and glues that can either be recycled or disposed of in

the garbage or down the drain. To narrow the field of HHP that must be specially collected, EOEA and DEP are conducting additional research on the management of particular HHPs to determine which materials can be effectively reused or recycled, which can be safely disposed of in municipal lined landfills, combustion facilities, or wastewater treatment plants, and which are truly hazardous and must be disposed of as hazardous wastes. The insight gained through this HHP Management Prioritization Study (described at the end of Section Two) will be used to develop a manual for HHP program coordinators with specific materials management recommendations.

Benefits of a Phased Collection Approach: EOEA proposes the phased permanent collection of priority materials *on the local level* as a way for municipalities to safely manage HHP over the long term. Localizing the management strategy recognizes the diversity of available options and the importance of providing convenient collection options for individuals. For example, while paint and oil might be collected at a municipally-run recycling center, button cells, NiCads, and car batteries can be returned to local retailers. In addition, many smoke detectors can be mailed back directly to the manufacturer. Thermostats may soon also be ripe for this approach. In several years, additional local private collection centers may develop, such as automotive centers accepting automotive materials, schools accepting fluorescent lamps, or photographic processors accepting spent photographic materials from amateurs. DEP encouraged the development of these private centers by issuing new HHW regulations (discussed at the end of Section Two).

Once Phase I or II materials are collected on a permanent local basis, they may no longer need to be collected at one-day collection events or at large regional facilities. Preliminary data suggest that municipalities permanently collecting Phase I priority materials (e.g., surplus paint, used oil, and household batteries) have significantly reduced the costs of their one-day collections. These events, when necessary, could then focus on a limited set of Category III materials that cannot be feasibly managed on a permanent local basis because they are generated in too small a quantity for one municipality. Alternatively, Phase III materials could be collected on a permanent *semi-regional* basis. These multi-municipal programs focused on a smaller universe of materials hold great promise for increasing the efficiency and effectiveness of collections. The best way to approach regional coordination, however, will become clearer as this plan continues to develop and be implemented.

This approach also allows municipalities to phase in the collection of priority materials as municipal budgets allow and as their knowledge of the management of various products becomes more refined. While some municipalities already collect a range of materials on a permanent basis, others are starting from a more basic level. Through a phased approach, the state can offer guidance to municipalities on what to collect, while allowing them to collect these materials at their own pace. Communities with more funds budgeted for HHP management, and with greater experience in this area, would be capable of managing a wide range of Phase I and II materials. Others, however, may want to permanently collect one or two materials each year, gradually gaining experience in this new area of materials management.

Collecting HHP on an ongoing basis also increases the percentage of priority materials that the municipalities can collect by increasing convenience for residents. The result has been a reduced environmental impact and an increase in materials being reused and recycled, further stimulating our blossoming recycling industry.

The Challenge Ahead for Regional and Municipal HHP Managers: The challenge that lies ahead for each community is to determine which materials are most necessary to collect. Currently, most one-day collections rarely distinguish between priorities. EOEA's general recommendation is to begin by collecting Category I and II materials first on a local basis, then move into the collection of a streamlined Category III set of materials on a semi-regional level. For municipalities currently conducting one or more one-day HHW collections, EOEA recommends shifting some, or all, of those funds into Category I and II materials, with a particular focus on mercury-bearing products, such as button cells and fluorescent lamps, and large volume materials, such as surplus paint and used oil.

Priorities, however, need to be set by each municipality or region. For example, municipalities served by a combustion facility may want to focus more heavily on removing products containing mercury and other heavy metals. Coastal communities and those near sensitive water bodies might instead emphasize the collection of used oil. And those whose waste goes to a landfill, whether or not it is lined, may want to collect liquid toxic materials that generate leachate. Other municipalities will have their own justification for prioritizing materials for collection.

This phased collection approach will allow each municipality to develop its own coordinated HHP strategy. Eventually, over a 3-5 year time frame, all municipalities in the Commonwealth should be able to manage their HHP in this comprehensive fashion. **Let us know how such a plan would work for your community or region.**

SECTION TWO
EOEA, DEP AND OTA: CURRENT PROJECTS AND PROPOSED PLAN FOR FISCAL YEAR 1997

This section is divided into four primary components, the first of which covers projects and strategies for high volume priority products (Category I). The second part discusses materials that are expected to be managed under EPA's Universal Waste Rule (Category II), and the third part presents actions for prioritizing the remaining low-volume materials. The final component covers programs that provide overall education, outreach, and technical assistance. Throughout each component, we group projects according to whether they are currently being implemented, FY 1997 core (ongoing) projects, or potential new initiatives. We are particularly interested in your feedback as to which projects we should pursue in FY 1997.

CATEGORY I: HIGH VOLUME PRIORITY MATERIALS

Programs are tailored for each material depending on the management solutions appropriate to that material. For example, since many paint products are readily recyclable, paint programs concentrate on closing the loop and creating new, recycled paint from surplus paint. Similarly, oil filter programs are focused on collecting a valuable material (used oil filters) that can be used in producing re-refined oil and recycled steel. Other products in this category are used oil, antifreeze, automotive batteries, gasoline, and household batteries.

PAINT AND RELATED PRODUCTS

CURRENT PROJECTS

Municipal Grant Program for Paint Storage Equipment

EOEA and DEP provide equipment to municipalities to encourage the collection of surplus paint and related products (stains, varnishes, lacquers, and thinners) for reuse and recycling. The equipment, consisting of wooden storage sheds and metal flammable cabinets, is intended to be the focal point for a surplus paint collection and exchange program.

Forty-two municipal and regional agencies have received surplus paint equipment grants in FY 1995, serving a total of 51 municipalities. Another 16 were provided grants in FY 1996, bringing the total for the two years to 58 municipal grants serving 67 municipalities. (See Appendix E for a map and listing of communities that have received grants.) Over the two-year period, EOEA has spent $245,000 on storage sheds and flammable materials storage cabinets. In return for receiving the storage equipment, the grant communities are required to hold collections on at least a monthly basis from April through November and provide data to DEP on the amounts of paint collected, exchanged, recycled, and disposed.

DEP is currently evaluating the paint storage equipment grants by surveying all municipal equipment grantees, observing several programs in operation, and organizing a forum in which the grantees can share their experiences and ideas. DEP staff are gathering data on the quantities of paint and related products collected and the recycling/disposal costs and savings for the communities that started their programs during the fall of 1995. Anecdotal feedback has generally been very positive and data from several municipalities show significant cost savings.

Two towns in particular have experienced great success -- Attleboro and Amherst. Attleboro has held six collections since it opened its center in August, 1995. The average amount collected each month is 673 gallons. Of this amount, approximately 2/3 is recycled, approximately 1/3 is disposed of as hazardous waste, and 2 percent is reused by residents. Prior to establishing the paint collection center, 80 percent of the costs of HHW collections were due to paint, which cost an average of $6.00/gallon to manage. With the permanent local paint collection center, Attleboro has saved $2.46/gallon. Based on these savings and current amounts collected, the city expects to save $11,000 in annual paint collection costs.

Amherst held two collections in 1995, including one in conjunction with the town's one-day HHW collection. Eight towns and five businesses were served. Of 600 gallons of latex paint collected, 200 gallons were exchanged and 400 gallons were recycled. Of 525 gallons of oil-based paint collected, 60 gallons were exchanged, 300 gallons were recycled, and 165 gallons were fuel blended. Overall, 23 percent was reused, 62 percent was recycled, and 15 percent was fuel-blended. The collections generated a gross revenue of $1,212 and cost $2,325 for a net cost of only $1,113, saving $4,173 compared with what the cost would have been through the town's HHW collection contract. The cost per gallon was $0.99, for a savings of $3.71 per gallon compared with a typical one day collection event.

Contract for Collection and Training

All surplus paint equipment grantees receive training co-developed by DEP and Clean Harbors, Inc., of Braintree, Massachusetts, the hazardous waste management firm contracted for this program. Municipal program managers and attendants learn how to properly sort paint products for reuse, recycling, or disposal. After a sufficient amount of non-exchangeable surplus paint is accumulated on-site, the contractor transports the materials to a paint recycler or hazardous waste facility. While EOEA and DEP pay for the training (a value of approximately $10,000 in FY 1996), the municipalities fund the paint recycling or disposal, as well as staff the collection effort. Although the contract for paint recycling and disposal is available to all municipalities of the Commonwealth, municipalities are not obligated to use the contractor. Recipients of equipment grants, however, are required to send at least two officials to a one-day training session held by the contractor. DEP has arranged for hands-on training sessions at operating program sites around the state and will also organize two discussion meetings for program managers and operators to share experiences and learn from each other. The contractor's duties also include supervising municipal attendants on-site during their first municipal collection.

Consumer Education

EOEA and DEP also provide each community receiving paint storage equipment with a customized brochure that announces the program, specifies which materials are accepted, where the location takes place, and when the site is open. The brochure is bulk mailed by DEP to all households in the participating communities. The value of these materials and services in FY96 was $100,000. To further promote proper paint management and paint waste prevention, OTA has developed two consumer oriented fact sheets (see Appendix F).

State Collection Contract

EOEA, DEP, and DPGS have jointly developed a state service contract for the collection of surplus paint, used oil, oil filters, antifreeze, and car batteries. The goal of the contract is to provide lower cost collection services to public agencies through volume discounts. A request for proposals (RFP) for vendor services has been issued in May, 1996, and a contract is expected to be in place by July. Vendors will bid on collection services from state and municipal agencies by regions of the state. When the contract is set, state agencies requiring surplus paint collection *must* purchase these services from the state contract. They can no longer voluntarily contract surplus paint collection, as is now the case. Municipal governments and other public entities can, however, *voluntarily* purchase from this contract. Because the chosen vendors will be guaranteed all state agency business for the region(s) they win, they will have an incentive to lower their service prices. To promote the waste management hierarchy, the contract gives preference to vendors who reuse and recycle the collected materials. The vendor proposals will be evaluated in part based on the environmental track record of their recycling and disposal facilities to ensure proper management practices.

Recycled Paint Procurement Contract

As part of the Clean State Initiative, DPGS and EOEA are working to increase the procurement of recycled products, including paint. By building markets for recycled paint, the state can "close the recycling loop" and conserve valuable resources. The first state contract for recycled paint was awarded to the Green Paint Company of Whitinsville, Massachusetts, in the spring of 1994. Through the first nine months of that fiscal year, state agencies had only purchased $1,200 of paint using that contract, compared with over $260,000 spent on all paint contracts. The recycled paint contract was amended in May, 1995 to include two new vendors -- Durant Paint of Revere, Massachusetts, and Northeast Solvents, a Canadian company -- providing a greater selection of colors. As a result, recycled paint purchases doubled in just two months, finishing FY95 with over $2,500 in state agency sales. In FY96, recycled paint purchasers again jumped, this time to over $20,000 by the end of June. DPGS contributed significantly to this increase through their series of "Buy Recycled" workshops focused on state and municipal officials held around the state. Sessions were specifically devoted to paint and other HHP.

DPGS and EOEA have begun targeting their marketing efforts toward state agencies that purchase the largest quantities of paint. These include agencies within the Executive

Offices of Health and Human Services, Public Safety, Transportation and Construction, and Environmental Affairs, who together purchase over 90 percent of the paint sold through the state contract. The Clean State Coordinators within each of these agencies have received packages of information describing recycled paint, which is equal in cost or less expensive than most of the virgin paint on state contract, and exhibits excellent performance. The recycled paint on state contract contains between 50-90 percent post-consumer content from paint collected at municipal HHP collection programs throughout the state. EOEA has had excellent results using recycled paint in its office, and DPGS has had a similar positive experience when using it for the McCormack Building Cafeteria. With CEF funds, DPGS will be procuring small amounts of recycled paint for six state facilities or municipalities for those users to test and evaluate for performance, color, and other important qualities. (See Appendix G for DPGS marketing materials on recycled paint and re-refined oil.)

FISCAL YEAR 1997 CORE PROJECTS

Continue Evaluation of Municipal Paint Recycling Program

DEP began to evaluate the municipal paint recycling program this fiscal year. It will continue to work with communities receiving grants to gather more information on the program and will prepare an in-depth evaluation. This evaluation will determine the changes that should be made to the program and whether grants will continue to be awarded.

Continue Municipal Paint Equipment Grant Program with Training and Brochures

Assuming that the program evaluation is positive, as expected, the municipal grant program for paint recycling equipment and training will continue. DEP will continue to provide municipalities with public education materials to advertise the program.

Promote Municipal Paint Exchanges

DEP will work with municipalities that have established paint collection programs to increase the exchange of uncontaminated paint. Reusing surplus paint is the most environmentally preferable alternative for paint collected at municipal recycling centers.

Promote Statewide Collection Contract among State Agencies and Municipalities

EOEA plans to work with DPGS to promote the new state collection contract among both state agencies and municipalities. This promotion will include routine notice of the contract's availability, as well as more targeted outreach to state agencies and large municipalities that purchase significant quantities of paint.

Evaluate Statewide Collection Contract

Once the collection contract has been established, EOEA will work with DEP, DPGS, and agencies using the contract to evaluate the contract and develop recommendations for its

revision. The evaluation will be focused on whether the contract is meeting the needs of state agencies and municipalities, as well as the cost of collection services.

Continue to Market Recycled Paint to State and Municipal Agencies

EOEA and DPGS will continue their efforts to increase the procurement of recycled paint by state agencies and municipalities, targeting the state agencies that use the largest amounts of paint. In addition to direct purchases of paint, many state facilities procure paint products and painting services indirectly as part of renovation and construction contracts with private vendors. In an effort to further increase the procurement of recycled paint, EOEA, DEP, and DPGS will work with the appropriate agencies to promote the use of recycled paint by these vendors in renovation and construction projects at state facilities.

POTENTIAL NEW INITIATIVES

Establish Recycled Paint Purchases as a Priority for the Buy Recycled Business Alliance

DEP would work with the Buy Recycled Business Alliance to enhance marketing efforts for the private sector use of recycled paint. Along with increased consumer use of recycled paint, increased use by the private sector would help to build a market for collecting recycled paint.

Develop Brochure Cooperatively with Paint Manufacturers for Distribution to Paint Retailers

Based on the foundation provided by an ongoing dialogue, EOEA and DEP would work with paint manufacturers to prepare brochures and point of purchase displays to make consumers aware of how to purchase, use and, if necessary, reuse or recycle surplus paint to minimize environmental impact and maximize resource conservation.

Identify Strategies for Improving Consumer Markets for Recycled Paint

EOEA and DEP would conduct meetings with paint manufacturers and retailers to identify market barriers to consumer purchase of recycled paint and develop recommendations for overcoming those barriers. These recommendations would serve as the basis for developing new market initiatives.

Continue Dialogue with Paint Manufacturers to Clarify Barriers to Paint Recycling

EOEA would greatly expand its current efforts by coordinating a dialogue with paint manufacturers to identify barriers to manufacturing recycled paint. Based on this research, EOEA, DEP, and the paint industry would develop new initiatives to improve paint recycling programs around the Commonwealth.

See Table 1 for a summary of the surplus paint program.

TABLE 1. SURPLUS PAINT PROGRAM

ACTIVITY	CURRENT PROGRAMS	FY 1997 CORE PROGRAMS	POTENTIAL NEW INITIATIVES
Reduce	• Promote concept of "use what you need," provide calculations • Develop Fact Sheet on paint waste prevention	• Distribute Fact Sheet on paint waste prevention	• Work with paint manufacturers to develop brochure for retailers on reducing use
Reuse	• Paint storage equipment grants for municipal and regional agencies, including municipal brochures • Provide training for municipalities on paint sorting and general program operation	• If negative program evaluation, develop other collection options; if positive evaluation, continue municipal grants with training and municipal brochures • Promote municipal paint exchange programs	• Develop paint brochure for retailers
Recycle (collection)	• Paint storage equipment grants, including municipal brochures • Contract with transporter to recycle paint not being re-used from municipal collections • Provide training for municipalities on paint sorting and general program operation • Evaluate paint equipment grant program • Develop statewide collection contract for state agencies and municipalities	• If negative program evaluation, develop other collection options; if positive evaluation, continue municipal grants with training and municipal brochures • Contract with transporters to recycle paint not being re-used from municipal collections • Promote and evaluate statewide collection contract for state agencies and municipalities	• Develop paint brochure for retailers • Conduct dialogue with paint manufacturers to clarify barriers to paint recycling
Procurement	• Establish and promote state procurement contract • Hold "Buy Recycled" workshops • Develop marketing materials for recycled paint • Target individual agencies for purchase and testing	• Hold more "Buy Recycled" workshops and vendor fairs • Target individual agencies for purchase and testing	• Identify strategies for improving consumer markets for recycled paint • Establish recycled paint purchase as priority for Buy Recycled Alliance
Disposal	• Contract with hazardous waste transporter to collect unrecyclable paint from municipal paint recycling centers for safe disposal • Statewide collection contract for state agencies and municipalities • Develop fact sheet on paint management and disposal	• Continue contract for municipal paint recycling centers • Promote statewide collection contract among state agencies and municipalities • Distribute fact sheet or paint management and disposal	To be developed

COMPREHENSIVE AUTOMOTIVE PRODUCTS PROGRAM

Five high volume priority materials are grouped in the category of automotive products: motor oil, oil filters, antifreeze, gasoline, and automotive batteries. Several strategies for automotive products overlap for all five of these materials, while others are specific to particular products. The approaches covering all automotive products are discussed first, followed by the programs specific to each material.

CURRENT PROJECTS

Promotion of Automotive Recycling Centers

EOEA and DEP provide 500-gallon used oil collection tanks, costing $3,500 each, to qualifying communities. To qualify for the grants, municipalities commit to establishing an "automotive recycling center" to collect, in addition to used oil, at least two of the three following items: spent antifreeze, used oil filters, and used car batteries. The goal of this program is to make the return of used automotive products more convenient for residents by providing one centralized return location. Used oil collection tank grants totalling $105,000 were awarded to 30 communities during FY 1995, with an additional 26 communities being awarded grants in FY 1996 totaling $91,000. As part of the grants, EOEA and DEP pay for, and mail, public education materials about the collection program to residents of municipalities receiving grants. A total of 131 municipalities in the Commonwealth now have a permanent site for the collection of used oil from residents. (See Appendix E for a map and listing of communities with used oil collection programs.) To further promote the responsible management of automotive wastes, OTA developed a consumer-oriented fact sheet (see Appendix H).

Expand Scope of State Collection Contract

As discussed in the preceding section on the management of paint products, EOEA, DEP, and DPGS are currently developing a master service agreement for the collection of four priority automotive products (motor oil, oil filters, antifreeze, and car batteries), in addition to paint products, from state agencies and municipalities. This contract lowers the collection cost of these priority materials for all agencies by providing a large service market. (See the earlier description of this program in the "Paint and Related Products" section for more details.)

"Greenwrench" Model Program

Through a grant provided by the Massachusetts Bays Program, Cambridge Environmental Inc. has developed a model program that focuses on improving pollution prevention practices and increasing environmental compliance among automotive repair businesses through positive incentives such as community recognition. The model also emphasizes reduced enforcement burdens by encouraging improved "up-front" compliance. This approach fits well with the Administration's focus on permit streamlining. OTA is

pursuing a similar approach through its proposed Compliance Simplification Project for autobody shops (see "Potential New Initiatives").

FISCAL YEAR 1997 CORE PROJECTS

Continue to Promote Automotive Recycling Centers

DEP will continue to assist municipalities that have received motor oil collection grants to establish automotive recycling centers, ensuring the completion of the State's grant agreement.

Promote State Collection Contract

EOEA and DEP plan to work with DPGS to promote the state collection contract among both state agencies and municipalities. This promotion will include routine notice to state agencies and municipalities of the contract's availability, as well as more targeted outreach to state agencies with large vehicle fleets and to municipalities that have established automotive recycling centers. Based on further research and program development on gasoline (see program description at the end of this section), EOEA and DEP will work with DPGS to further expand the collection contract to include gasoline.

Evaluate State Collection Contract

(See description under "Paint and Related Products.")

POTENTIAL NEW INITIATIVES

Public Education and Outreach

EOEA and DEP would build on existing public education materials on managing used automotive products to distribute information on both public and private collection options within particular communities. These programs would include information on municipal automotive recycling centers, private collection centers, and other public and private collection locations. Programs would include point of purchase displays and a toll-free telephone number to be established as part of EOEA's proposed used oil program. (See description of Used Oil program in this section.)

Autobody Shop Compliance Simplification Project

OTA has applied for an EPA grant to work with DEP and the Massachusetts Attorney General's Office to educate autobody shops about improving their environmental performance and make it easier for these businesses to comply with environmental regulations. A particular emphasis would be placed on pollution prevention practices. OTA would produce a "plain language" handbook for auto body shops covering these topics. If funded, the project would begin in the fall of 1996.

See Table 2 for a summary of the automotive products program.

TABLE 2. AUTOMOTIVE PRODUCTS PROGRAM

(This chart only covers programs that cut across all automotive products. See the following pages for information specific to particular automotive products.)

ACTIVITY	CURRENT PROGRAMS	FY 1997 CORE PROGRAMS	POTENTIAL NEW INITIATIVES
Reduce	• Develop fact sheet on automotive waste prevention and management • Developed "Greenwrench" model program on pollution prevention	• Distribute fact sheet on automotive waste prevention and management	• Improve pollution prevention and compliance of auto body shops through outreach, technical assistance and handbook
Reuse	No programs currently in place	To be developed	To be developed
Recycle (collection)	• Promotion of municipal automotive recycling centers • Collection contract to support recycling of used oil, oil filters, antifreeze, and automotive batteries, including training • Develop fact sheet on automotive waste prevention and management	• Continue promotion of municipal automotive recycling centers • Promote use of state collection contract by state agencies and municipalities • Distribute fact sheet on automotive waste prevention and management • Evaluate state collection contract	• Public education and outreach for recycling of automotive products
Procurement	(See used oil program chart for information on used oil procurement.)	(See used oil program chart for information on used oil procurement.)	To be developed
Safe Disposal	• State collection contract that promotes safe disposal and provides training for municipalities • Developed "Greenwrench" pilot program to increase pollution prevention and regulatory compliance	• Promote use of state collection contract by state agencies and municipalities, and provide training for municipalities	• Public education and outreach • Improve pollution prevention and compliance of auto body shops through outreach, technical assistance and handbook

MOTOR OIL

CURRENT PROJECTS

Used Oil Collection Tanks

(See previous section entitled "Promotion of Automotive Recycling Centers.")

State Collection Contract

DPGS, EOEA, and DEP are currently developing a state service contract that will make collection of used oil available to all state agencies and municipalities at a set price. This agreement, expected to be in place by July or August, will include training and technical assistance to collection center operators. (See previous section under "Paint and Related Products" for a full description.)

Used Oil Policy Research

In Massachusetts, up to 2.2 million gallons of used oil per year are disposed of improperly -- down storm drains, in solid waste landfills and combustion facilities, or directly onto the ground -- by motorists who change their own oil. This "lost" amount is equal to three oil spills each year of the size that recently occurred off the coast of Rhode Island. It also represents a lost resource that could be re-refined or fuel blended for energy recovery. Only 15-20 percent of used oil from motorists changing their own oil is currently returned to a collection center.

The 1973 Used Oil Return Law requires all retailers selling motor oil, service stations, and marinas to collect up to 2 gallons of used oil per person per day if the consumer has a receipt. The law has not been followed by many retailers, who contest the requirement that small stores selling motor oil have a collection facility and trained personnel. Consumers complain about having to save their receipt in order to have the oil collected. And DEP has found enforcement of the law to be difficult due to inadequate staff to police the numerous retail outlets. There is also no program funding. For the past 17 years, legislation to solve these problems has been introduced unsuccessfully.

Recognizing the significance of the used oil problem and the need to develop a more effective program, EOEA hired a consultant, Goldman Environmental Consultants (Randolph, Massachusetts), in January, 1995, to conduct a *Used Motor Oil and Oil Filter Policy Review.* Research covered used oil and oil filter collection activities in Massachusetts and in other states, and provided recommendations for a comprehensive program to increase collection opportunities for consumers. A final version of this report was completed in June, 1996.

Development of Used Oil Legislative Proposal

After preliminary research, EOEA held two focus groups in March, 1995, to obtain input on different policy approaches from a diverse group of participants, including representatives of the petroleum industry, retailers, environmental groups, waste management firms, quick oil change companies, gas stations, marinas, and local/regional government agencies.

Following the two focus groups, EOEA worked with key stakeholders to develop a proposal that would increase collection from DIYers, while addressing the interests of other parties involved with used oil management. This proposal was sent to a wide range of interested parties and discussed at two focus group meetings held by EOEA in August, 1995. Based on feedback from these meetings and subsequent follow-up discussions, EOEA reached a basic consensus on a final proposal that it is currently evaluating.

There are five major elements of the proposal:

(1) Individuals returning used oil will receive their $.05 per quart refund back from all retailers and other collection centers that claim recycling incentive payments. In California, which has such a law signed by Governor Pete Wilson in 1992, individuals rarely request their deposit, which creates a financial incentive for collection centers.

(2) As proposed by motor oil manufacturers and distributors, the new legislation would create a dedicated fund through a $.05 per quart *refund payment* by these businesses, which will likely be passed on to the consumer;

(3) Used oil collection centers (retailers, gas stations, quick oil change businesses, marinas, municipalities) would be eligible for up to a $.05 per quart *"recycling incentive payment"* from the state fund;

(4) The *dedicated fund* would be used for public and private collection centers; signs at stores selling motor oil and collecting used oil; an education/media campaign; disposal of contaminated oil; curbside oil recycling pilot projects; and administration by DEP and the Department of Revenue.

(5) *Added Flexibility*: (a) small retailers (selling under 200 gallons of motor oil per year) are exempt from collection, but must post signs paid for by the fund; (b) all collection centers can "opt-out" of collection by contracting with another collection center within a "reasonable distance" (to be set by regulation); and (c) consumers don't need a receipt to return used oil, thus allowing them to bring it to any collection center.

Used Oil Return Consumer Behavior Study

EOEA and DEP have contracted with Cambridge Reports to identify the population of consumers who change their own oil and to determine behavioral factors motivating them to

return used oil to a collection center. Results of this study should be available in July or August.

Re-refined Oil Procurement Contract

DPGS, in conjunction with EOEA, established a new state purchasing contract for re-refined motor oil in 1995. This contract is available to all state agencies and municipalities and covers all major grades of motor oil. These agencies purchased over $100,000 worth of virgin oil from the state contract in FY 1995. The re-refined oil on state contract is either cheaper or the same price as virgin oil of the same grade. Since the contract went into place in September, 1995, only small amounts of re-refined oil have been purchased by state agencies or municipalities. However, as described below, DPGS, in cooperation with EOEA, is taking several steps to increase the purchase of re-refined oil.

Re-refined oil that meets API specifications has been proven to be as effective as virgin oils and will not void vehicle warranties. Performance concerns with re-refined oil have been addressed through extensive use by public agencies such as the United States Postal Service and the State of Vermont. Purchasing re-refined oil can help "close the recycling loop" by providing a market for used oil that is collected, resulting in lower collection costs for the recycled materials, and reducing the need for virgin oil. Furthermore, purchase of the re-refined oil supports a Chelsea, Massachusetts business, Dennis K. Burke Inc.

As with recycled paint, EOEA is working with DPGS to target state agencies that purchase the greatest amounts of re-refined oil, including agencies within the Executive Offices of Transportation and Construction, Public Safety, Environmental Affairs, and Health and Human Services. EOEA and DPGS have sent marketing materials (see Appendix G) to Clean State Coordinators in state agencies and to municipalities to encourage them to purchase re-refined oil. The information emphasizes the competitive cost of re-refined oil compared to virgin oil and the outstanding performance of re-refined oil. DPGS is also promoting the purchase of re-refined oil at Buy Recycled workshops for state and municipal officials.

Used Oil Hotline

DEP operates a used oil hotline, **(617) 556-1022**, to answer questions and respond to complaints from the public on proper management of used oil. Callers to the hotline can receive informational materials on used oil recycling.

FISCAL YEAR 1997 CORE PROJECTS

Municipal Grants for Used Oil Collection Tanks

As with the current program, these grants will include training and public education materials for a number of eligible municipalities.

Promote Passage of Used Oil Legislation

Legislation to replace the current Used Oil Return Law will not be passed during this legislative session. EOEA will continue to evaluate the current proposal and the available legislative options. Building a successful used oil program is dependent on passing and implementing effective new legislation. If legislation *is* successfully passed during next year's legislative session, EOEA will work with DEP to promulgate streamlined regulations and standards necessary to implement the revised law. In addition, the new legislation would help to fund the programs described below, in addition to other programs listed in the potential new initiatives section. (Funding is not expected to become available for significant program development, however, until FY 1998 or 1999, after legislative appropriation.)

If used oil legislation were to pass, new program initiatives would include the following:

- Expanded public and private grant program for used oil collection tanks (including establishing convenient locations for boat users).

- Greatly enhanced education/outreach and media program for the public and private collection centers, including multi-media advertising, a toll-free telephone hotline, and signage at all collection points.

- Reimbursement to collection centers for the disposal of contaminated oil.

- Provide technical assistance for public and private used oil collection centers on responsibilities for proper handling, recycling, management, and maintenance.

- Improve inspection and enforcement efforts. Provide training to local Boards of Health to assure consistent standards of enforcement.

Promote State Collection Contract

EOEA plans to work with DEP and DPGS to promote the state collection contract among both state agencies and municipalities. (See section under "Comprehensive Automotive Products Programs" for a complete description.)

Promote Re-refined Oil Purchases

EOEA and DEP will continue to work with DPGS to directly promote the purchase of re-refined oil from the state contract by state and municipal agencies. As was mentioned previously, there are no technical barriers to using re-refined oil. Increasing use is merely a matter of overcoming inaccurate perceptions. DPGS will promote the purchase of re-refined oil, along with other recycled products, at Buy Recycled workshops targeted to both state and municipal officials. Through its contracts for the Buy Recycled Business Alliance, DEP will encourage the purchase of re-refined oil by commercial and industrial users.

In addition, many state agencies purchase motor oil indirectly through the statewide vehicle maintenance contract. Under this contract, agencies bring vehicles to designated sites throughout the state for maintenance and repair services, including oil changes. As part of the effort to increase procurement of re-refined oil, EOEA, DEP, and DPGS will promote the use of re-refined oil by the vehicle maintenance contractor at its maintenance facilities.

POTENTIAL NEW INITIATIVES

Pilot program for curbside collection of used oil

Curbside collection programs have been popular and successful in other states, but have not yet been attempted in Massachusetts. EOEA and DEP would develop one or two municipal pilot programs to identify, and overcome, potential barriers to implementing curbside collection programs in Massachusetts.

Pilot used oil collection program at public docks and private marinas

Collection points at public docks would provide greater convenience for boat users, especially for commercial boat owners and operators that use large quantities of oil and often do not have accessible collection facilities available to them. EOEA and DEP would set up, and evaluate, one or two collection centers at a public dock and one at a private marina.

Limited public education and outreach program

To increase public awareness of current used oil recycling options, EOEA and DEP would increase outreach to consumers, including working with retailers to provide point of purchase information, and with automotive service businesses such as quick oil change centers to promote their collection programs.

Evaluate the Burning of Used Oil in Space Heating

Many municipalities burn used oil in space heaters to heat municipal buildings. These burners are not equipped with extensive air pollution control devices and, therefore, may impact local air quality. DEP would evaluate the costs and benefits of on-site oil burning in space heaters and provide recommendations on this widespread practice.

Assist Regional Pilot Efforts to Provide Oil Change Services to Municipalities

Several regional entities are interested in establishing a pilot program to provide vehicle maintenance services, including oil changes, to municipalities. This program would eliminate the need for municipalities to manage used oil from their own vehicles.

See Table 3 for a summary of the used oil program.

TABLE 3. USED OIL PROGRAM

ACTIVITY	CURRENT PROGRAMS	FY 1997 CORE PROGRAMS	POTENTIAL NEW INITIATIVES
Reduce	N/A	N/A	N/A
Reuse	N/A	N/A	N/A
Recycle (collection)	• Conduct used oil policy research • Develop used oil legislation • Municipal used oil collection tank grants, including training • Develop state collection contract	• Continue municipal grant program • Promote state collection contract • If legislation passes, develop regulations and programs to implement legislation • If legislation does not pass, continue attempt to reform law	• Regional pilot program on oil change service for municipalities • Develop pilot programs for curbside collection and collect at public docks and marinas • Expand public education and outreach efforts
Procurement	• Establish state contract for purchase of re-refined oil • Target state agencies purchasing large amounts of oil to buy re-refined oil • Promote use of re-refined oil at Buy Recycled Workshops • Develop marketing materials on re-refined oil	• Continue to promote use of re-refined oil through Buy Recycled Workshops and marketing materials-expand to private sector	To be developed
Safe Disposal	• Provide training to municipalities with tanks	• Provide training to municipalities with tanks	• Research the risks, costs, and benefits of burning used oil in space heaters

OIL FILTERS

CURRENT PROJECTS

State Collection Contract

DPGS, EOEA, and DEP are currently developing a state service contract that will make collection of used oil filters available to all state agencies and municipalities at a set price. This agreement, expected to be in place by July or August, will include training and technical assistance to collection center operators. (See previous section under "Paint and Related Products" for a full description.)

Conduct Oil Filter Research

As part of the *Used Motor Oil and Oil Filter Policy Review*, EOEA directed its consultant to review current Massachusetts activities regarding collection, recycling, and disposal of used oil filters. Current DEP policy encourages recycling of used oil filters in that filters that are destined for recycling are exempt from hazardous waste regulation if the filter is punctured and hot drained for a minimum of 12 hours. Otherwise, undrained used oil filters are considered a fully regulated hazardous waste. The research report was completed in June, 1996, and will be used to develop a program to manage used oil filters in Fiscal Year 1997. (See Appendix I for a list of Massachusetts used oil filter recyclers.)

Establish Dialogue with Oil Filter Manufacturers and Recyclers

EOEA held an initial meeting with the Filter Manufacturers' Council (FMC) and other representatives of filter manufacturers in October, 1995, to discuss options for managing used oil filters in Massachusetts. Filter manufacturers provided information on national trends in oil filter manufacturing, purchase, collection, recycling, and disposal of oil filters. This information will be used to supplement EOEA's own research efforts in developing a comprehensive program for Massachusetts. EOEA and DEP have also met with oil filter recyclers to discuss ways to increase the number of oil filters being recycled.

FISCAL YEAR 1997 CORE PROJECTS

Continue Dialogue with Oil Filter Manufacturers and Recyclers

Partly as a result of the state's outreach efforts to filter manufacturers, FMC has chosen Marlborough, Massachusetts as a site for a regional workshop on oil filter recycling on October 3 (see Appendix J).

Promote State Collection Contract

EOEA plans to work with DEP and DPGS to promote the state collection contract among state agencies and municipalities. (See section under "Comprehensive Automotive Products Programs" for a complete description.)

POTENTIAL NEW INITIATIVES

Develop Comprehensive Oil Filter Collection and Recycling Program

EOEA and DEP would work with the Filter Manufacturers Council, companies that collect and recycle oil filters, other waste management interests, municipalities, environmental groups, and other stakeholders to develop a program for collecting and recycling used oil filters in Massachusetts. This process would be a streamlined version of the consensus-based process EOEA used to develop its used oil legislative proposal. Once successful programs are established, DEP would develop an education and outreach effort for municipal and state agencies, including a fact sheet on hot draining oil filters.

Procurement of Oil Filters Made with Recycled Steel

EOEA and DPGS, along with the Steel Recycling Institute and the Filter Manufacturer Council, would investigate the potential for state agencies to purchase oil filters containing a minimum percentage of recycled steel.

See Table 4 for a summary of the used oil filter program.

TABLE 4. USED OIL FILTER PROGRAM

ACTIVITY	CURRENT PROGRAMS	FY 1997 CORE PROGRAMS	POTENTIAL NEW INITIATIVES
Reduce	N/A	N/A	N/A
Reuse	N/A	N/A	N/A
Recycle (collection)	• Develop state collection contract • Conduct used oil filter policy research • Begin policy dialogue with oil filter manufacturers	• Promote state collection contract • Continue dialogue with oil filter manufacturers	• Develop program for collection and recycling of used oil filters, including an education and outreach program
Procurement	No programs currently in place	To be developed	• Investigate potential for purchasing oil filters with minimum percent of recycled steel
Safe Disposal	• Current DEP policy requires hot draining of used oil filters - if not, must be regulated as hazardous waste • Conduct research on improving collection and safe disposal of used oil filters	To be developed	• Develop program to increase collection and safe management of used oil filters, including fact sheet on hot draining oil filters

ANTIFREEZE

CURRENT PROJECTS

State Collection Contract

DPGS, EOEA, and DEP are currently developing a state service contract that will make collection of used antifreeze available to all state agencies and municipalities at a set price. This contract, expected to be in place by July or August, will include training and technical assistance to collection center operators. (See previous section under "Paint and Related Products" for a full description.)

Research Nature of Problem and Potential Management Solutions

DEP has prepared a list of companies that provide on-site antifreeze recycling systems and/or provide antifreeze collection services (see Appendix I). These options are being explored by various regional and local government agencies. For example, in Barnstable County, several towns collect antifreeze from residents and then give that antifreeze to local businesses who have recycling machines on site and can reuse the antifreeze after treating it. Through the first nine months of the program, which began in early 1995, 1200 gallons of antifreeze have been collected. In addition to the benefit of preventing the improper disposal of antifreeze, this collection program reduces the cost of disposing of the antifreeze through a one-day HHW collection event. (See Appendix K for more information about the antifreeze collection program managed by the Cape Cod Cooperative Extension Service.)

FISCAL YEAR 1997 CORE PROJECTS

Promote State Collection Contract

EOEA plans to work with DEP and DPGS to promote the state collection contract among both state agencies and municipalities. (See section under "Comprehensive Automotive Products Programs" for a complete description.)

Highlight and Expand on Existing Municipal and Regional Efforts

EOEA will work with local and regional government agencies and private businesses to identify and expand on existing pilot programs, such as the one in Barnstable County. Just as with the grants for used oil storage tanks, specific antifreeze collection and recycling programs could be integrated into the concept of "automotive recycling centers," providing convenience for citizens while ensuring targeted, effective solutions for each specific material. Once recommendations are developed and successful programs identified, DEP will develop an education and outreach effort for municipal, regional, and state agencies.

POTENTIAL NEW INITIATIVES

Conduct Research on Antifreeze Recycling Systems

On-site antifreeze recycling systems provide another potential alternative for recycling and reusing spent antifreeze, without having to transport it off site. EOEA and DEP would investigate the potential cost and effectiveness of these systems compared with off-site recycling options. If this equipment proves to be cost-effective, it could be integrated into DEP's existing recycling grant program.

Procurement of Recycled Antifreeze

DPGS and DEP would research the potential for purchasing antifreeze with a minimum percentage of post-consumer content. In addition, many state agencies purchase antifreeze through the statewide vehicle maintenance contract, which includes antifreeze replacement service. As part of the effort to increase the procurement of recycled antifreeze, EOEA, DEP, and DPGS would promote the use of recycled antifreeze by the state vehicle maintenance contractor.

TABLE 5. ANTIFREEZE PROGRAM

ACTIVITY	CURRENT PROGRAMS	FY 1997 CORE PROGRAMS	POTENTIAL NEW INITIATIVES
Reduce	N/A	N/A	N/A
Reuse	• Research potential collection solutions to increase antifreeze reuse/recycling	• Highlight and expand on existing municipal and regional programs using on-site antifreeze reuse equipment • Develop education and outreach program for municipal, regional, and state agencies	• Conduct research on on-site antifreeze reuse equipment
Recycle (collection)	• Develop state collection contract • Research potential collection solutions to increase antifreeze reuse/recycling	• Promote state collection contract • Highlight and expand on existing municipal and regional programs • Develop education and outreach program for municipal, regional, and state agencies	
Procurement	No programs currently in place		• Research potential for purchasing antifreeze with certain percent of post consumer content
Safe Disposal	• Research potential collection solutions to reduce improper disposal of spent antifreeze	• Highlight and expand on existing municipal and regional programs	To be developed

GASOLINE

CURRENT PROJECTS

Barnstable County Pilot Project to Recycle Old Gasoline

EOEA is funding a pilot project, developed by the Cape Cod Cooperative Extension, to recycle old or contaminated gasoline in Barnstable County. Marinas and gasoline stations on Cape Cod have historically accepted old gas from individuals. For this project, these locations will voluntarily serve as collection points. The old gas collected from boat and automobile owners will be tested for contamination, reconditioned according to current methods, and then retested against usable gas standards. The reconditioned gas will be tested in small equipment and vehicles by participating public works departments. As part of the program, the Extension plans to develop public education materials to promote the reduction and recycling of old and contaminated gasoline by consumers.

FISCAL YEAR 1997 CORE PROJECTS

Barnstable County Project on Recycling Old Gasoline - Final Report

The Cape Cod Cooperative Extension will write a report on the results of the project. If the project is successful, a permanent recycling program, through gas stations, marinas, and departments of public works, will be put into place. Local fire safety officials will act as inspectors for the equipment, trainers for DPW personnel, and consultants in each town.

POTENTIAL NEW INITIATIVES

Statewide Implementation of Program

Based on the Barnstable County gasoline recycling project results, the Cape Cod Cooperative Extension will make recommendations to EOEA for implementing a similar program on a statewide basis. EOEA would work with the Extension, other regional agencies and municipalities, and relevant businesses to develop a statewide program.

AUTOMOTIVE BATTERIES

CURRENT PROJECTS

State Collection Contract

DPGS, EOEA, and DEP are currently completing a state master service agreement that will make collection of used antifreeze available to all state agencies and municipalities at a set price. This agreement, expected to be in place by July or August, will include training and technical assistance to collection center operators. (See previous section under "Paint and Related Products" for a full description.)

Few other specific programs have been instituted by EOEA and DEP for automotive batteries, as these batteries are already being recycled at high rates due to the high market value of lead. Retailers and automotive service businesses have aggressively pursued battery collection and recycling programs, as have many municipalities.

FISCAL YEAR 1997 CORE PROJECTS

Promote State Collection Contract

EOEA plans to work with DEP and DPGS to promote the state collection contract among both state agencies and municipalities. (See section under "Comprehensive Automotive Products Programs" for a complete description.)

As an extension of the statewide collection contract, EOEA and DEP will encourage municipalities to collect automotive batteries as part of municipal automotive recycling centers. The agencies will highlight battery collection as part of their education and outreach efforts.

HOUSEHOLD BATTERIES

CURRENT PROJECTS

Household Battery Collection and Recycling Policy

Heavy metals in waste products, such as mercury, cadmium, and lead, are a health and environmental concern for Massachusetts citizens and solid waste disposal facility operators. Because certain types of batteries are a significant source of heavy metals in the municipal solid waste stream, EOEA has placed the safe management of batteries high on its priority list. DEP's report, *Mercury in Massachusetts: An Evaluation of Sources, Emissions, Impacts and Controls*, identifies batteries as the most major source of mercury emissions from MSW disposal facilities. Similarly, nickel-cadmium (NiCad) batteries and lead acid batteries contribute a significant amount of cadmium and lead, respectively, to MSW. To decrease these heavy metals in MSW, EOEA has been working to encourage battery recycling by streamlining collection requirements.

EOEA and DEP recently developed a major policy (see Appendix L) that allows batteries which test as hazardous waste (those containing certain amounts of mercury, cadmium, or lead) to be more easily collected and recycled from commercial and institutional establishments, as well as households. More specifically, EOEA is promoting the collection and recycling of NiCad, button, and lead acid batteries. This regulatory streamlining approach will ensure greater environmental protection by collecting a greater number of hazardous batteries prior to disposal, while also decreasing administrative burdens. This policy, however, is only a complement to the passage of battery legislation (see next page).

One example of this policy's success was the recent kick-off of a NiCad battery collection program for Massachusetts by EOEA, the Rechargeable Battery Recycling Corporation (RBRC), Wheelabrator Technologies, the Retailers Association of Massachusetts, Radio Shack, and other program sponsors. EOEA fully supports efforts to collect NiCads dropped off by consumers and businesses at drugstores, electronic supply stores, and other retail outlets. Over 200 Massachusetts retail stores are currently participating in the RBRC program. This program provides retailers with all the necessary materials, such as collection boxes, labels, and point-of-purchase displays, and pays for the shipping of batteries to the recycling plant. RBRC has recently begun a new collection program for municipalities, providing free five-gallon collection pails to municipalities through regional offices of DEP and other regional planning entities. As with its retailer program, RBRC will pay for shipping and provide educational materials. The Massachusetts municipal collection program is the first in the nation and is being used as a model for other states around the country.

In addition, RBRC lists all retail and municipal locations on a nationally advertised toll-free number, **1-800-8-BATTERY**, for consumers to find out where and how they can recycle their batteries. (See Appendix M for additional information on the RBRC recycling program.) Wheelabrator is also offering button cell and NiCad battery collection programs to the 74 municipalities it services at its three in-state solid waste combustion facilities, with over 30 communities already collecting button cells and another 30 collecting NiCads.

One of the earliest battery collections in the state, however, was established in 1991 through the state-owned Springfield Materials Recovery Facility (SMRF) and the private Springfield Resource Recovery Facility (SRRF). To lower mercury emissions, residential button batteries from 10 municipalities sending waste to the SRRF were collected curbside in small bright orange bags and captured either by local haulers or at the SMRF and recycled. Over time, SRRF shifted the program toward retail collection, which is where it stands today. In 1994 and 1995, the SRRF collected 130 pounds of batteries, including button cell batteries and 9-volt mercury hearing aid batteries. (See program description in Appendix K for more details.) Another community in the region, Amherst, has begun using the distinctive bright orange bags in the curbside program and capturing button cells with the aid of its municipal haulers.

Pilot Collection Programs

In addition to the battery collections in the Wheelabrator municipalities, pilot collection programs have also begun in Barnstable County and in North Shore communities. In March, 1996, EOEA and DEP awarded a technical assistance grant to the Barnstable County Health Department for the collection of button cell and nickel-cadmium batteries from municipalities and retail businesses in five municipalities (Sandwich, Falmouth, Mashpee, Barnstable, and Yarmouth). The pilot project includes the collection of fluorescent lamps from school and municipal offices and the collection of mercury-containing thermostats from local contractors (as part of an EPA grant). The North Shore is developing a similar collection effort for button cells and NiCads based on funding from EOEA and DEP for a regional recycling coordinator at the Essex County Office of Regional Services.

Household Battery Recycling Legislation

EOEA has strongly supported efforts to pass a comprehensive, aggressive, and workable battery bill. Two battery bills have been introduced in the Massachusetts Legislature over the past few years by Representative David Cohen and Representative William Straus, who have since developed one joint bill that was introduced to the Committee on Science and Technology in March. EOEA and DEP extensively researched the battery issue and have worked closely with Reps. Cohen and Straus. EOEA also developed its own position on battery legislation which takes key elements from both the Cohen and Straus bills.

Prior to state legislative action, however, federal battery legislation was signed into law in May, 1996. This new law should substantially reduce the amount of mercury and cadmium entering the environment from batteries through sales bans and other requirements. The federal law is substantially similar to legislation supported by EOEA with one exception -- it does not include a requirement, supported by EOEA, that battery manufacturers recycle all button cell batteries until such time that they are manufactured to the level at which they contain "no added mercury." The federal legislation *does* have such a requirement for *alkaline cylindrical batteries* to be manufactured to the no added mercury level. (See Appendix N for a chart comparing the federal battery law and EOEA's legislative position.)

DEP estimates that, assuming the federal battery law is in place, button cell batteries still would contribute at least 325 pounds of highly toxic mercury to MSW per year, although

this figure does not account for any increase in the sale of replacement button cells containing lesser amounts of mercury than the mercuric oxide variety now banned by the federal legislation. Further, it appears that an aggressive button cell recycling program for Massachusetts would be cost effective. DEP estimates that, at the current market rate, the estimated recycling cost for button cells is $1.09 per gram of mercury recovered, assuming that mercuric oxide button cells are banned. Under such a ban, statewide recycling of all remaining button cells would cost approximately $160,000 per year (assuming consumer drop-off to centralized locations, such as retail outlets or DPW facilities). Collecting button cells also makes sense since over 90% of Massachusetts municipal solid waste is expected to be disposed of in combustion facilities by the year 2000.

Obtain State Authorization for the Universal Waste Rule

The EPA's Universal Waste Rule streamlines the management and collection of certain widely generated, or "universal," hazardous materials, including batteries, pesticides, and mercury-containing thermostats. EOEA and DEP are currently working toward obtaining state authorization to administer the Universal Waste Rule, which would apply to batteries determined to be "hazardous." (See next section on Universal Waste Rule.)

FISCAL YEAR 1997 CORE PROJECTS

Expand Local Battery Recycling Programs

EOEA and DEP will continue to promote the local permanent collection of NiCad and button cell batteries. As part of this promotion effort, DEP developed a consumer-oriented fact sheet on household battery recycling (see Appendix O).

RBRC and EOEA hope to significantly increase the number of municipalities permanently collecting NiCads at retail and municipal locations. EOEA has also begun to meet with manufacturers of button cell batteries on developing a cost-effective, statewide button cell recycling program. EOEA recognizes the tremendous achievement that these companies have already realized by reducing the amount of mercury in batteries by over 95% since the mid-1980s. EOEA hopes that these companies will continue to work with the state in eliminating one of the most significant remaining sources of mercury in the municipal solid waste stream -- button cell batteries.

Pilot collection programs will be expanded to other parts of the state and may include regional programs to test the following collection options for button cell batteries: retail collection combined with municipal drop-off collection, curbside collection, and a return by mail program. These programs would then be evaluated on the basis of participation levels, providing information for developing a statewide collection program for button cell batteries.

Develop Regulatory and Outreach Strategy to Implement New Battery Law

In response to the new federal battery law, the "Mercury Containing and Rechargeable Battery Management Act of 1996," DEP will develop a regulatory strategy for compliance and enforcement that includes an outreach program to businesses likely to be affected by the law.

EOEA has also discussed with battery manufacturers the need for a brochure and other materials to inform retailers about their responsibilities under the new law.

Continue Efforts to Obtain Authorization for Universal Waste Rule
(See the next section on the Universal Waste Rule.)

POTENTIAL NEW INITIATIVES

Develop Educational Materials on Rechargeable Batteries

EOEA would work with RBRC and other manufacturers selling rechargeable batteries to develop educational materials promoting the economic and environmental benefits of using rechargeable (reusable) batteries. These materials, which would emphasize the environmental benefits of using rechargeable batteries, would be distributed to consumers at retail and other collection locations. Brochures given to consumers would also provide information on how to recycle these batteries.

Research Feasibility of Collection Programs for all Rechargeables

EOEA and DEP would research the feasibility of a collection program for all rechargeable batteries, including nickel metal hydride and other chemical forms. This research would build on the experience of existing battery collection programs in Massachusetts.

Develop State Procurement Contract for Rechargeables

Based on research of battery use by state agencies and municipalities, EOEA would work with DPGS to develop a state contract for the procurement of rechargeable batteries by state agencies and municipalities.

Develop Collection Program for State Agencies and Municipalities

EOEA would work with DPGS to address the non-automotive battery collection needs at state and municipal offices and facilities. This program could either be part of a battery purchase contract or the statewide collection contract described in the earlier "Paint Products" section.

Evaluate Alternative and other Rechargeable Batteries and Battery Chargers

Rayovac has marketed new rechargeable alkaline batteries, which contain no mercury or cadmium. These batteries are sold along with a variety of other rechargeable batteries. In addition, some battery chargers can recharge most typical alkaline batteries numerous times prior to disposal. Other chargers reenergize button cells with solar power. EOEA and OTA would evaluate these different technologies and issue the results of their tests.

TABLE 6. HOUSEHOLD BATTERY PROGRAM

ACTIVITY	CURRENT PROGRAMS	FY 1997 CORE PROGRAMS	POTENTIAL NEW INITIATIVES
Reduce	• Promote EOEA legislative position • Provide technical assistance to legislature on battery bills	• To be developed	• Develop state procurement contract for rechargeables with DPGS • Develop educational materials with RBRC and others manufacturers on rechargeable batteries • Evaluate new alkaline rechargeables and other battery types and battery chargers
Reuse	• Promote EOEA legislative position • Provide technical assistance to legislature on battery bills	• To be developed	• Develop state procurement contract for rechargeables with DPGS • Develop educational materials with RBRC and other manufacturers about using rechargeable batteries • Evaluate new alkaline rechargeables and other battery types and battery chargers
Recycle (collection)	• Issued policy to encourage recycling of batteries • Working with RBRC to establish collection programs for NiCads • Promote state authorization of Universal Waste Rule • Help organize model battery collection pilot programs • Promote EOEA legislative position • Provide technical assistance to legislature on battery bills	• Expand local NiCad and button battery collection programs • Develop regulatory and outreach strategy to implement new federal battery law • Reevaluate legislative options • Obtain Universal Waste Rule Authorization	• Develop collection program for state agencies and municipalities • Research feasibility of statewide collection program for all rechargeables
Procurement	No programs currently in place	To be developed	• Research battery use and needs of state and municipal agencies • Develop DPGS procurement contract for rechargeables
Disposal	• Discourage disposal/encourage recycling of NiCads and mercury-containing batteries • Promote EOEA legislative position. • Provide technical assistance to legislature on battery bills	• Promote collection program for state and municipal agencies	To be developed

CATEGORY II: UNIVERSAL WASTE RULE MATERIALS

In April, 1995, EPA published a modification to its regulations pertaining to the Resource Conservation and Recovery Act called the Universal Waste Rule (40 CFR Part 273). This rule is designed to reduce the regulatory burden of managing universally used consumer products that may be classified as hazardous waste when disposed. The reduced regulatory burden of managing these wastes will lead to improved environmental management, as the permanent collection and recycling of Universal Wastes will increase. The rule includes the following three categories of products:

- hazardous waste batteries
- mercury thermostats
- recalled or hazardous waste pesticides

Such wastes will be exempted from hazardous waste management if collected and directed to appropriate recycling or treatment facilities. Streamlining regulatory requirements for Universal Wastes will lower costs for businesses and other entities that must currently handle these materials as hazardous wastes. States that receive authorization from EPA can also include additional materials under the Universal Waste Rule following an in-state public comment period.

CURRENT PROJECTS

Consultant Research on Obtaining State Authorization

Financed by the EOEA through the Clean Environment Fund, DEP hired a contractor in February, 1996, to conduct research on the Universal Waste Rule to prepare for state authorization of the EPA rule. The research identifies issues to be addressed when considering adoption of the Universal Waste Rule, such as interstate transport and applicability of the rule to Very Small Quantity Generator (VSQG) wastes. The research also summarizes key provisions of the rule. DEP will hold two focus groups in July to receive feedback from stakeholders on the rule and make recommendations on how to proceed with authorization. DEP expects to obtain authorization by December, 1996.

Internal Research

The consultant's research is being supplemented by internal research at DEP and at OTA, which will focus on the Universal Waste Rule in the context of this plan, determining which materials would be best managed under the Universal Waste approach. Other potential Universal Waste materials include computer components, fluorescent lamps, spent antifreeze, circuit boards, thermometers, and mercury-containing switches. As part of this research, OTA developed a consumer-oriented fact sheet on pesticide waste prevention and management (see Appendix P), and DEP developed a consumer piece on fluorescent lamps (see Appendix Q). In addition, OTA developed a database of computer reuse and electronics recycling organizations (see Appendix R).

Regional Coordination Between States

DEP and EOEA are working with the Northeast Waste Management Officials' Association (NEWMOA) to coordinate state actions with respect to the Universal Waste Rule. DEP and EOEA are participating in the NEWMOA effort to resolve questions pertaining to the rule and joined the seven other NEWMOA states in signing a letter of intent to implement the Rule. EOEA and DEP will continue to work with NEWMOA to coordinate implementation among northeastern states.

Universal Waste Rule Pilot Projects

As mentioned previously, Wheelabrator Technologies currently collects button batteries from 30 of the 74 municipalities served by its three in-state combustion facilities. This program was recently expanded to include NiCad battery collection. A pilot project for the collection of button cell and NiCads, fluorescent lamps, and mercury-containing thermostats in five Barnstable County communities was established through a technical assistance grant by EOEA and DEP in March 1996. In the North Shore, a pilot collection project for button cells and NiCads was established based on a 1995 technical assistance grant. (These projects are described in more detail in the earlier section on household batteries, and in the Appendix K.)

FISCAL YEAR 1997 CORE PROJECTS

Obtain State Authorization

The consultant currently conducting research on the Universal Waste Rule will work directly with DEP to promulgate regulations and prepare other materials required for state authorization of the Universal Waste Rule. These regulations, expected to be issued as a draft for public comment in September, 1996, and as a final regulation in November, 1996, will be based on the research and focus groups currently underway. The consultant will also develop and incorporate recommendations on other materials to be included in the state version of the rule.

Expand Collection Programs

EOEA and DEP will expand on the establishment of permanent local collection opportunities for button cell batteries, NiCads, fluorescent lamps, and thermostats to other regions of the state.

Education and Outreach

Once Massachusetts has received authorization for the Universal Waste Rule by EPA, EOEA DEP, and OTA will develop fact sheets and other educational materials to inform businesses, municipalities, and the general public about collection opportunities.

POTENTIAL NEW INITIATIVES

New Pilot Collection Programs

EOEA would establish new collection efforts for materials currently not being widely collected on a permanent basis, such as pesticides, thermometers, computers, and electronic equipment.

Report on Managing Computers and other Electronics

OTA would conduct research on managing used electronics equipment, such as computer terminals. This research would evaluate management options available to businesses and households and recommend the best strategies for implementation. These recommendations would then be used to develop a pilot collection program for electronics.

Research on Low-Mercury Fluorescent Lamps

EOEA and DEP would gather information on the environmental impacts of disposing of low-mercury fluorescent lamps. This research would focus on the economics of recycling compared with solid waste disposal for both high-mercury and low-mercury lamps. Programs and regulations in other states would be reviewed to gain an improved understanding of the environmental impacts and management approaches for low-mercury lamps.

Educational Materials for Hospitals

Hospitals handle materials, such as batteries, fluorescent lamps, and thermometers that could be covered under the Universal Waste Rule. Once state authorization for the URule is obtained, DEP would work in conjunction with the City of Boston and the MWRA to develop educational materials for hospitals, providing information and guidance on how hospitals can better manage these materials.

CATEGORY III: LOW VOLUME MATERIALS

CURRENT PROJECTS

HHP Management Prioritization Study

EOEA has provided DEP with CEF funds to hire University of Massachusetts researchers to perform a risk-based study of options for managing specific HHP. This study, the first of its kind in the country, will identify household products that may impact wastewater treatment and solid waste disposal facilities, including landfills, combustion facilities, wastewater treatment plants, and septic tanks. The study will identify the fate of various categories of HHP in each type of disposal facility and will investigate reuse and recycling opportunities. The goal of this study is to gain a better understanding of the risks of

various waste management methods for particular types of products so that EOEA and DEP can make more informed decisions on the management of categories of discarded hazardous household products. Ultimately, the information gathered will help EOEA and DEP formulate product-specific reuse, recycling, and disposal recommendations.

The study will recommend management options for products not included in Category I or II of this plan. Depending on the waste type, its amount, and the disposal facility that might receive it, different recommendations will include reduction, reuse, recycling, safe disposal down the drain or in the trash, and collection for hazardous waste disposal.

EOEA and DEP developed a draft scope of services for this study (see Appendix S) with the help of several advisors within the agencies and from relevant waste management companies. UMass has completed a portion of the study and will complete the work over the next fiscal year.

FISCAL YEAR 1997 CORE PROGRAMS

Alternative Products Research

OTA will research literature on the hazards involved in using certain household products, including cleaners with toxic compounds. OTA will also investigate methods for testing non-toxic alternative products and evaluate the feasibility of an outside consultant performing a scientific study on the issue. The goal of this work would be to publish a consumer's shopping guide on the use of non-toxic alternatives. Such a study and guide would be conducted with input from household product manufacturers and other key stakeholders.

POTENTIAL NEW INITIATIVES

Develop HHP Manual

HHP program managers frequently receive calls from residents requesting guidance on the management of their HHP. Although limited information is generally available on certain waste types, there is no comprehensive source that describes the preferred management option for each specific HHP. In addition, the preferred option may change depending on the alternatives available to any given community or individual. For example, disposal recommendations for certain HHP for a community sending its MSW to a combustion facility may be different from one which landfills its MSW.

Based on results of the HHP management study, EOEA and DEP would develop a detailed manual with product-specific management recommendations for a range of HHP. This manual would contain information on current HHP and MSW management systems for all 351 cities and towns in the Commonwealth so that any conditional HHP disposal recommendations can be correlated with the town-specific waste management system. The manual will emphasize waste reduction, reuse, and recycling options, and may include recommendations for alternative products that are considered less toxic. The manual would

be a "living document" in a loose leaf binder format that would be periodically updated based on changes in MSW management and new information on the characteristics of particular products.

EOEA would work with HHP program managers to ensure that the manual is user-friendly and usable by DEP regional staff, as well as recycling/solid waste managers in large municipalities or in regions. The manual would be used in conjunction with a telephone hotline that residents could call to obtain guidance on handling particular products. The manual would be completed by the end of FY 1997 and distributed to key HHP managers on a trial basis. Managers using the manual would be trained on its use, perhaps in FY 1998.

Model Collection RFP

While EOEA's HHP management Strategy is clearly to promote permanent local collection opportunities for priority materials, municipalities may still have reason to proceed with one-day HHW collection events on an interim basis. Several regional efforts, particularly those in Franklin County and NESWC, have considerably lowered per participant costs. Approaches that have worked the best to lower costs include requests for bids on a per car or per pound basis, as compared to typical RFPs that ask for quotations based on volume.

DEP would assemble an information packet for municipal and regional program managers interested in developing a request for proposals (RFP) for HHW collection services. This packet would include basic information for writing an RFP and would reference other existing materials on this issue.

EDUCATION, OUTREACH, AND TECHNICAL ASSISTANCE PROJECTS

CURRENT PROJECTS

HHP Hotline

Both DEP and OTA routinely field calls from municipal coordinators, residents, and businesses on a variety of HHP management issues. DEP has established a toll-free (in-state) hotline **[(800) 343-3420]** for general questions on HHP management.

Public Education Materials

DEP and OTA have developed fact sheets on a variety of HHP, such as surplus paint, household batteries, fluorescent lamps, pesticides, and automotive products. These sheets contain information on product hazards, pollution prevention practices, preferred management methods, and recycling or disposal services. DEP will survey regional and municipal program managers on items of concern to them and will record their success stories. This information will help guide the development and updating of these and other information sheets.

HHP Forum

EOEA, DEP, and OTA recognize the importance of networking and sharing information as a way to improve program development and innovation. DEP holds an annual forum for municipal and regional HHP coordinators, as well as vendors and other interested parties, to learn about new programs and initiatives at the state and municipal/regional levels. Just as importantly, this exchange offers feedback to the state agencies. Last year's forum was held on December 12, 1995, and was attended by nearly 100 people (see Appendix T for a program agenda). Our hope is that, through these forums, good working relationships can be established among municipal and regional officials and between government and private sector program managers.

Promote Regional Initiatives

EOEA recognizes the value of regional solutions to waste management issues. The combined resources of several communities can often effect a greater change more efficiently than those of each community individually. For example, several regional planning agencies have set up joint HHW collection contracts to reduce costs to each community. Other HHW task forces have researched other management solutions, including the local permanent collection of priority materials. EOEA supports such creative problem solving and will assist regional efforts where possible. Through the CEF, EOEA and DEP have provided funding in fiscal year 1996 for three regional recycling coordinators--Northeast Solid Waste Committee (NESWC), South Shore Regional Refuse Management Association, and the Essex County Office of Regional Services, each of which have established programs for HHP management. EOEA has also funded the Barnstable County regional pilot project for the collection of batteries and fluorescent lamps. In addition, DEP staff have provided technical assistance to several regional efforts and facilitated information sharing among them. (See Appendix U for a map and list of regional HHP planning districts.)

As many HHP program managers have already pointed out, developing coordinated regional HHP solutions will be critical to the success of most individual municipal programs. Appendix U illustrates that most communities currently do not have such a planning infrastructure. EOEA, DEP, and OTA will attempt to enhance this regional support network with the assistance of existing planning agencies, including the Massachusetts Water Resources Authority and the Metropolitan Area Planning Council.

Reduction of Chemical Hazards in Public Schools

OTA provides the following technical assistance to public schools:

- Identifies pollution prevention opportunities in such areas as science labs, cleaning chemicals, art departments, and pesticide use through on-site visits and technical reports, including on-site training;

- Provides information and training on lab safety, chemical handling and storage, and hazardous waste disposal; and

- Meets with school administration, staff, and parents to reduce chemical hazards.

Amendment to Massachusetts HHP Management Regulations

Working with the Hazardous Waste Advisory Committee, DEP amended its regulations pertaining to HHP management to allow for private sector involvement as a sponsor of event collections or permanent centers. DEP also worked to reduce the time and paperwork associated with applying for a permit to establish a collection center. The regulatory amendments became effective on November 17, 1995. (See Appendix V for a summary of the revised regulations).

FISCAL YEAR 1997 CORE PROJECTS

Promote HHP Hotline

Once a significant number of fact sheets and new materials are developed, DEP and OTA will publicize the toll-free phone number **[(800) 343-3420]** to call for HHP management information. Phone logs will be established to track the quantity and type of calls, and to evaluate the provision of our information services.

HHP Program Database

To improve our planning capabilities, OTA will develop a standardized database of local permanent and one-day HHP programs, and will integrate information from DEP's recycling grant program and EOEA's Recycling Report Card. Annual reports now required of permanent HHW programs by DEP through the amended HHW regulations will be another source of new data from communities. This database will provide insight on trends in program costs, materials collected, and regions served. As an interim measure until this database is complete, however, EOEA developed a database of municipal HHP permanent recycling programs by priority material (see Appendix W). If local permanent HHP collection opportunities are listed incorrectly for your municipality, please be sure to call EOEA's John Fischer at (617) 727-9800 (ext. 287) or OTA's Grace Offen (ext. 696). Alternatively, you could provide these data on DEP's new recycling grant application form to be distributed in late July/early August.

An interagency group is currently working to coordinate and reduce data requests to make reporting less burdensome for municipal officials. To obtain feedback on its database development effort, OTA and DEP sent a survey to municipal and regional HHP managers in April, 1996 (see Appendix X). Please provide any comments on data reporting to DEP's Lori Segall at (617) 292-5704.

HHP Task Force

After holding a series of regional meetings around the state to discuss this report, EOEA will convene regularly-scheduled meetings with an HHP Task Force that will focus on

the development and implementation of this statewide plan, as well as to assist each region in developing its own HHP management strategy.

HHP Forum

DEP plans to hold another forum in December of 1996 to continue to network among state, regional, municipal, and private entities involved in the management of HHP.

Public Education Materials

DEP and OTA will continue to develop fact sheets on a variety of HHP and difficult-to-manage wastes and are currently surveying the needs of regional and municipal program managers for topic areas that can be addressed through educational materials (see Appendix X).

POTENTIAL NEW INITIATIVES

Permanent HHP Programs and Facilities

Based on information gathered on VSQG needs and feedback from regional and municipal HHP program managers and private sector HHP management service providers, EOEA will investigate the advantages and disadvantages of establishing various types of permanent collection programs and facilities for hazardous materials from households and small businesses, or from households alone. As mentioned in Section One of this document, EOEA believes that the greatest potential for cost-effectively managing HHP is to collect high-volume materials on a local permanent basis and to collect low-volume materials at a semi-regional permanent facility.

Although EOEA anticipates that any regional (or semi-regional) facility would be limited to only those HHP that do not lend themselves to permanent collection on the local level, the agency would explore this assumption in light of other options, ranging from municipal-only collections of all HHP to facilities serving small clusters of municipalities, and to facilities serving large regions. Among other issues, EOEA will investigate capital and operating costs, potential service coverage (including both geographic area and population), and types of materials that should be collected. If EOEA determines that permanent regional facilities may serve as reasonable alternatives for some communities, it will work with the appropriate governmental entity(ies) to develop a pilot project with private sector involvement. This determination will likely be made in FY 1998 or FY 1999.

POTW Information and Training

Based on existing publications by OTA, the Water Environment Federation, and others, OTA would produce an information packet and presentation for pre-treatment program staff of publicly owned treatment works (POTW), including technical data on water contaminants from consumer products and wastes, to emphasize the importance of diverting certain materials from wastewater treatment facilities. The packet would also include relevant

regulations, as well as information on setting up a collection program for HHP and/or VSQG wastes.

VSQG Database and Management Project

To effectively plan for the management of hazardous materials from small businesses, or "Very Small Quantity Generators" (VSQG's), we need to better understand the categories of businesses of concern and the types of wastes they generate. In the first phase of a VSQG management project, OTA and DEP will develop a VSQG database for a pilot area within a selected watershed and will work with local Fire Chiefs and Boards of Health to gather data.

Once information is gathered on categories of VSQGs and the wastes generated, OTA and DEP will formulate a plan to work with business groups on managing their priority materials. The agencies will review their data to determine what types of materials would be suited for source reduction, reuse, or recycling, and possibly consolidation. They will work with local trade associations and other business groups to determine how to best change VSQG management practices.

News Update for HHP Program Managers

DEP and OTA will plan outreach services and materials for municipal and regional HHP program managers to report on new developments in the field, studies, publications, relevant meetings and conferences, and other events.

SECTION THREE

ROLES OF STATE GOVERNMENT AND OTHER PARTIES IN HHP MANAGEMENT

The improper disposal of leftover and used hazardous household products is important to other EOEA agencies besides DEP and OTA, as well as to many regional and municipal governments and private businesses. For instance, several agencies and organizations whose mission is to protect water quality have designed a number of education and grant programs to encourage the responsible management of used oil. In addition, many regional planning entities have provided technical assistance to their member communities to lower the cost of collection services. (Tables 7, 8, and 9 list the major state, regional, municipal, and private HHP programs in Massachusetts. This list is by no means complete, but does include many of the programs currently in place across the state. For a detailed description of activities for each agency, municipality, or business, as well as contact names and phone numbers, see Appendix K.) Let us know if we have inadvertently omitted any efforts.

While many parties need to be involved to make HHP programs successful, current efforts have focused on the specific needs of the sponsoring organizations without being coordinated with activities of other groups. This sometimes has led to a duplication of effort. In the future, EOEA will maximize the effectiveness of these diverse programs by coordinating them more fully. As mentioned at the end of Section Two, EOEA will establish periodic meetings for key stakeholders involved in HHP management to discuss state and regional HHP plans.

State agencies need to work cooperatively with local and regional public sector entities, business and industry, and environmental advocacy groups. Each of these groups has an important role to play, but should focus on particular functions to maximize their effectiveness. Based on our past experience, we have outlined what we think are the appropriate roles for each party. Let us know if you have any additions or changes to these roles.

State Role (EOEA)

EOEA and two of its agencies, DEP and OTA, have joined forces to create a statewide plan for the appropriate management of HHP. These agencies perform the following functions:

- set overall direction for state and promote waste management hierarchy
- coordinate activities among state agencies and between regional and municipal entities
- perform research to disseminate to municipal and regional HHP managers
- develop and implement concepts for replicable reuse and recycling programs
- provide grants to municipalities and regions to promote better management of HHP

- perform clearinghouse function of educational and technical information
- develop educational materials for consumers, businesses, and municipal and regional governments
- increase procurement and use of recycled products by state and municipal agencies

Other State Agencies

EOEA/Coastal Zone Management (CZM):
- addresses non-point pollution sources affecting coastal waters
- works through the Massachusetts Bays Program to integrate stakeholder involvement in management activities

EOEA/Department of Food and Agriculture (DFA):
- oversees and regulates proper use, handling, and disposal of pesticide products

EOEA/Metropolitan District Commission (MDC):
- assists in coordinating municipal HHP management activities in the Wachusett, Ware, and Quabbin Watersheds

Executive Office of Administration and Finance (EOAF)/Department of Procurement and General Services (DPGS):
- procures recycled goods and services for state and local government

Local/Regional Role

- implement HHP educational programs and collection activities
- provide data and feedback to state and other groups on HHP program operation
- work together with other municipal and regional governments to make programs more efficient
- support increased CEF funding for HHP management programs
- procure recycled products

Business/Industry

- reduce toxicity of products containing hazardous substances
- assist with take-back of outdated or used HHP
- offer trained employees for community collections
- offer one day or permanent collections for employees and/or residents in the communities in which they are located
- support increased CEF funding for HHP management programs
- procure recycled products

Environmental Advocacy

- raise awareness about hazards in household products
- lobby for reduction of toxicity in products
- promote consumer purchase of less toxic products and recycled products
- lobby for greater procurement of recycled products by state and local government agencies and the public
- urge legislators to support increased levels of CEF funding

TABLE 7. RELATED STATE AGENCY ACTIVITIES

AGENCY	HHP RELATED ACTIVITIES
EOEA: Mass. Environmental Trust	• developed/implementing outreach campaign for photoprocessors; considering pilot collection • funded homeowner education project on septic system maintenance
EOEA: Mass. Dept. of Food and Agriculture	• participated in pesticide amnesty in 1990 • conducting survey of large pesticide users for assistance needs • developing IPM guidance for urban homeowners and businesses
EOEA: Metropolitan District Commission	• provided funding for 3 one-day HHW collection programs in the Wachusett watershed during Spring 1995 • working with EOEA and Wachusett communities on HHP management options for FY 1996
EOEA: Coastal Zone Management Office (CZM)	• developed comprehensive coastal nonpoint source pollution control plan in 1995 that includes hazardous waste from agriculture, forestry, urban areas, and marinas
CZM: Mass. Bays Program	• publicize other agency efforts on safe disposal of HHW • support used oil collection facilities in coastal communities • funded storm drain stencilling program
Department of Procurement and General Services/Executive Office of Administration and Finance	• developed state purchase contract for recycled paint in 1994 • developed state purchase contract for re-refined oil in 1995 • prepared marketing materials and workshops to promote use of these contracts by state agencies and municipalities • currently developing master service collection contract for state agencies and municipalities on paint and automotive materials
University of Massachusetts at Amherst, Intermediate Processing Facility	• established innovative electronic equipment "de-manufacturing" and recycling program

TABLE 8. REGIONAL AGENCY ACTIVITIES

AGENCY	HHP RELATED ACTIVITIES
Barnstable County Board of Health and Environment	• implementing EOEA/DEP pilot program for permanent collection of fluorescent lamps, button batteries, NiCads, and mercury thermostats • cleaned out Cape high school laboratories
Cape Cod Commission	• researched alternative HHW/VSQG management strategies • helps coordinate town-sponsored HHW collections • coordinates data gathering for HHW program participants • currently developing master contract for one-day collections • research ways to reach elderly and renters
Cape Cod Cooperative Extension	• point of purchase campaign for motor oil and paint listing appropriate recycling sites • developed pilot collection programs for used antifreeze • implementing EOEA/DEP pilot collection program for old gasoline • monitors municipal permanent collection sites for paint and automotive materials
Essex County Office of Regional Services	• EOEA/DEP technical assistance grant used to organize HHP programs • currently developing master contract for one-day collections • starting permanent local collection programs for button batteries and NiCads
Franklin County Solid Waste Management District	• developed master contract for one-day collections • developed HHP public education brochure for residents • developed mobile exhibits and point-of-purchase displays
Greater New Bedford Regional Refuse Management District	• held joint HHW collection for New Bedford and Dartmouth • developing plans for a permanent HHW collection center
Martha's Vineyard Refuse Disposal & Resource Recovery District	• established permanent HHW collection center

AGENCY (cont.)	HHP RELATED ACTIVITIES (cont.)
MAPC/South Shore Regional Refuse Planning	• hired a coordinator (through EOEA/DEP grant) to organize HHP programs • developed master contract for one-day collections with reciprocity for all member communities
Mass. Water Resources Authority (MWRA)	• established 9 used oil collection centers for DIYers during 1994-1995 • organized HHW collection programs in 6 communities to collect data (completed in 1992)
Merrimack Valley Planning Commission	• provides technical assistance to communities on collections
Northeast Solid Waste Committee (NESWC)	• EOEA/DEP technical assistance grant used to organize HHP programs • re-started a task force on HHW • developed master contract for town-wide one-day collections
Pioneer Valley Regional Planning Commission	• researched regional options for HHW management • currently developing master contract for one-day collections

TABLE 9. MUNICIPAL AND PRIVATE ACTIVITIES

MUNICIPALITY/BUSINESS	HHP RELATED ACTIVITIES
Lee/Lenox/Stockbridge	• have held joint HHW collection events for over six years • considering establishing permanent collection center
Somerville	• established permanent HHW collection center • held seven collection events at permanent center in 1995 • coordinate HHW collections with paint reuse/recycling program based on EOEA/DEP grant
Sturbridge	• established permanent collection center in 1989 • hold monthly collection events at the permanent center
Amherst	• held two paint-only collections in addition to HHW collection in 1995 • permanent collection of paint and several automotive materials • permanent paint collection saves over $4,000 annually compared with one-day collections • accept waste from VSQGs on a payment basis
Attleboro	• held six paint collection events since August, 1995 • saved $11,000 annually compared with one-day collections
Haverhill	• established used oil collection center with assistance from OTA and Clean Water Act grant
Springfield Resource Recovery Facility	• collect button cell batteries from 10 communities
Wheelabrator Environmental Systems	• collect button cell batteries from over 30 municipalities • collect nickel-cadmium rechargeables from over 30 municipalities and in cooperation with over 200 retailers